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An Attack on Mr. John Elliot

THE debate in the House of Lords last week on the summer passenger train services is reported and commented on in its broader aspects elsewhere in this issue. During the course of that debate an extraordinary attack was made on Mr. John Elliot, Chairman of the Railway Executive. Lord Waleran referred to interviews which Mr. Elliot had given during and after his recent visit to America without apparently checking the facts as carefully as might have been expected. He took Mr. Elliot to task for what he called "an unwarranted abuse of a great institution, the British press," and presumably reached this conclusion on his earlier remark that Mr. Elliot "is reported to have said in a press interview in New York that the newspapers are not printing the truth. He was referring to the British press, and his complaint apparently was based on the fact that the British newspapers did not accept his view that the railways made a profit of £29 million last year." In fact, Mr. Elliot was quoted in *The New York Times* of May 8 in the following words: "He said the British roads expected to have a net profit of £32 million this year as compared to £29 million last year. However, they will need to show a £37 million profit to pay 3 per cent. interest on their Government guaranteed stock." This puts a different complexion on the matter. In the first place, Mr. Elliot was not condemning the British press in America. In the second, he was presumably using the term "net profit" as meaning net receipts before payment of interest charges, but in *The New York Times* quotation he did indicate what these interest charges were and what the shortfall was expected to be this year. When Mr. Elliot had returned to England

he gave an interview to the *Evening Standard*. On May 28 that newspaper stated: "Mr. Elliot tells me British Railways have been earning profits, but the newspapers will not print the truth." The cause of the deficit, he says, is that the railways must pay interest on the 3 per cent. stock issued to the old shareholders as compensation." Taken in its context, it is reasonably clear that by this Mr. Elliot meant that the British press had not explained that his profit figure was struck before provision for interest on capital. *The New York Times*, on the other hand, had made that point.

"Daily Worker" Quoted

LORD WALERAN in the House of Lords went on to link the reports of Mr. Elliot's statement with an extract from the *Daily Worker* reading as follows: "Why is there a deficit? Only because the railways are burdened with colossal freight charges running to £33 million a year in the total transport stock for the inflated capital holdings of the former shareholders." He drew the conclusion that both the *Daily Worker* and Mr. Elliot seemed to believe in abolishing interest on capital expenditure, and added, "It is surely remarkable that the Chairman of the British Railway Executive and the Communist newspaper share the same view." We dealt at some length with Mr. Elliot's first interpretation of railway profits struck before providing for the remuneration of capital in our March 23 issue. It was made clear then that British Railways have a surplus revenue before taking into account interest on capital. "Net profit" is not a term that is well known in dealing with railway finance, and after all the publicity that has been accorded to it in the press and in the House of Lords, we feel sure that Mr. Elliot will wish that he had adhered more closely to custom and used the words "net receipts." It is not always wise to over-simplify matters of this kind. Nevertheless, in justice to him, and whatever view one adopts as to the desirability of including interest payments before assessing the financial return on British Railways, there can be no good reason for excluding the proviso that Mr. Elliot made when he gave the interview to *The New York Times*. If this point is granted, together with that relating to the quotation in the American press interview, the unfortunate conclusions drawn by Lord Waleran can have no substance.

British Railways' Message to Staff

THE message to the staff of British Railways on the eve of the postponed summer passenger services last weekend, signed by Mr. John Elliot, Chairman of the Railway Executive, and the Chief Regional Officer concerned, is a reminder of the intense effort required of many individuals to ensure punctuality in a timetable that is often exacting. The text of the message is given elsewhere in this issue. It is largely the result of smart and diligent station working that punctuality is maintained and passengers' journeys made reliable as well as comfortable. Another quality stressed is helpfulness in dealings with the public; this implies *inter alia* an intelligent curiosity as to train services and other travel activities which affect the passenger though they may not normally come within the purview of the railwayman concerned. The exhortation to triumph over present difficulties sounds the right note and should arouse the right sort of aggressive spirit.

Another Wage Claim?

RISE prices were stated by Mr. H. W. Franklin, President of the National Union of Railwaymen, at its annual conference earlier this week, to make another railway wage claim inevitable, although the wages settlement last February had satisfied the majority of railwaymen. To this he added a warning of the dangers of inflation: they must be prepared to exercise restraint in demands, although the unions should see that railwaymen were "not always lagging behind in the race between prices and wages." His reference to facile criticism of management by the rank and file (with the corollary that those in senior

posts could be easily replaced by union members) was wise and timely. In contrast to this was the statement of Mr. J. B. Figgins, General Secretary of the union, that the Government would have to provide assistance to enable the British Transport Commission to fulfil its functions, and that "as a union" they could not contemplate continued payment of the railway interest charges provided for in the Transport Act. Nor is it clear what benefit is expected from any inquiry by the trades unions into the financial structure of the Commission.

South African Railways Staff Re-employment

DURING January, February, and March, according to the staff organ of South African Railways & Harbours, no fewer than 539 former servants, including clerks and stationmasters, of the South African Railways applied for re-employment. Since then, an even larger number of applications for re-employment has been received. It is not surprising that from a European labour source of more than 104,000, many resignations take place, especially in the artisan and clerical grades. Of those who leave the railway service, attracted by higher salaries which are sometimes offered by commercial and industrial firms, many become disillusioned and are anxious to return to the security, privileges, and other advantages of a railway career. The number of resignations from the South African Railways fluctuates considerably; there were, for instance, many in 1948, but comparatively few in 1949; an increase in 1950 was followed by a substantial decline in the first half of this year. Today, the situation may be regarded as normal, with the added feature of the large number of requests to rejoin the service.

The St. Clair Tunnel

IN 1889 work began on the construction of an international tunnel under the St. Clair River, between Sarnia, Ontario, and Port Huron, Michigan. The railways concerned were the Grand Trunk Railway, on the Canadian side, and the Grand Trunk Western, on the American side. Since January 30, 1923, the former railway has been a constituent of, and the latter, a subsidiary of the Canadian National Railways. The tunnel is a single-line tube, bored by the shield method. It consists of cast-iron flanged segments bolted together to form rings 1 ft. 6½ in. wide and has an internal dia. of 19 ft. 10 in. Of its 6,028 ft. length, 1,700 ft., roughly in the middle, are nearly level, but the remaining 1,900 ft. towards the Canadian end and 2,428 ft. towards the American portal are on 1 in 50 gradients which continue in the approaches. When built, the bottom of the tunnel was filled with concrete to a maximum depth of 1 ft. 8 in. as a foundation for four rows of timber stringers carrying transverse sleepers. As described elsewhere in this issue, this timber has all been replaced by concrete stringers and continuous iron plates enabling rail level to be dropped 6 in., and allowing of this additional headway to take bigger rolling stock.

Field Treatment for Hardening Rail-Ends

THE practice of hardening rail-ends appears to be gaining favour, at any rate in some directions, in America. Ten years ago rolling mills supplied end-hardened rails, but during the war such rails were difficult to obtain. Accordingly, the engineers on the Southern System determined to experiment with the field-hardening of new rails in the track without even removing the fishplates. Early experiments using hand torches and water quenching were not successful, but showed the way to water-cooled torch tips and compressed-air quenching. Though still in the experimental stage, a portable end-hardening machine has been evolved, and is in use on that system. The ultimate aim is to be able to carry out the hardening as fast as relaying proceeds. Tests with this machine, which can quickly be removed from the track, are giving progressively satisfactory results towards a field-hardening that will compare favourably with the hardness, and particularly the consistency of hardness obtained in mill-hardening.

The tests are closely checked by the use of complete laboratory facilities and are concentrated mainly upon ascertaining the temperature to which the rail should be heated, the length of the air-quench, the volume of air required for quenching, the effects of temperature and humidity, and the differences in the rails themselves.

Reliability of Radio Communications

GANGS employed on the electrification of the Brussels-Charleroi and Linkebeek-Antwerp Nord lines of the Belgian National Railways have been equipped with mobile short-wave radio sets for communication with stations at each end of the section where they are at work. The system is reported to have minimised the time lost by interruption of work during the passage of trains, and to be more satisfactory than the use of temporary telephone lines or of look-out men alone for giving warnings of approaching traffic. Radio has become increasingly attractive for semi-portable applications of this kind in which maximum reliability must be combined with limited size and weight. A high degree of compactness is made possible by the development in recent years of valves and components in miniature sizes. It is remarkable that this process of "miniaturisation," as it is called, has occasioned no sacrifice of robustness even in valves with the very fine filaments necessary for operation in portable receivers where all supplies are taken from dry batteries. In a recent test in this country twelve battery valves in standard communications equipment mounted on the rear mudguard of a motor cycle were driven for 200 miles over normal and rough roads, including tramline cobbles. All were found to be unimpaired at the end of the trial.

Power Points Moved under a Train

SIGNALLING arrangements on the London Underground are so complete that any accident there is always a matter of special interest. On July 1, 1950, a train was derailed at Edgware Road, and the report of Colonel D. McMullen on the accident is summarised in this issue. The equipment is all-electric, with continuous track circuiting and train describers. A train from Putney found the signals clear for its usual route into one of the loop platforms, but as it neared the home signal, that was replaced to red, unexpectedly tripping the brakes, and the points were set in motion as the first wheels were entering them. They moved right over between the two bogies of the leading car, causing the rear one to travel to the up main line, swinging the car round and completely derailling the rear bogie. Colonel McMullen places the responsibility for the accident on an inspector and considers that he was misled by cancelling a train description prematurely and then imagined that the train from Putney had arrived. Had the points been of the electro-pneumatic type—now standard on London Transport—they would probably have moved over before the train got to them. Colonel McMullen thinks that consideration might be given to the relationship between speed at the approach to signals and the lengths of existing overlaps.

"WP" Class Locomotives in India

ELSEWHERE in this issue is an article dealing with the performance in service of the "WP" class broad-gauge passenger locomotives. During the past three years the Indian Railways have introduced four new classes of engines further implementing their policy of standardisation. The new series is "WP," "WG," "YP," and "YG," and the locomotives are required for passenger and goods operating on the broad and metre gauge respectively. A considerable degree of interchangeability has been effected between the locomotives built for each gauge with components including, among other features, a common boiler and interchangeable tenders, valve gear, hind trucks, frame steel castings and axleboxes. Sufficient mileage has been earned by the "WP" class locomotives to enable an interesting comparison to be made between them and other locomotives on similar services. The degree of

interchangeability attained between the new series should lead to a reduction in stores balances without detriment to an efficient repair period during workshop repairs. The "WP" class supersedes the Indian State Railways "XB" and "XC" class engines.

Manpower and Passenger Train Cuts

THE debate on British Railways passenger services in the House of Lords last week, of which some account is given on other pages in this issue, did not show members of the Upper House to be as well informed as usual on the questions it discusses. The chief points emerging are those made by the Parliamentary Secretary to the Ministry of Transport, Lord Lucas, the alleviation of freight traffic congestion, and the impending deterioration next winter of the railway manpower situation, resulting in reduction of passenger services.

The jam in freight traffic, Lord Lucas rather cautiously admitted, is over, at least for the time being, and with the exception of a few places in the South where coal stocks are being built up. Route embargoes have been lifted. The chief causes for this improvement are the better weather in recent weeks, weekend work by many volunteers in the operating grades (to whom Lord Lucas paid a well deserved tribute), and a reduction in coal traffic at weekends due to the virtual cessation of pit shift working on Saturdays.

The first of these factors is purely seasonal and temporary; if the manpower shortage becomes worse, with consequent strain on the existing staff, continued intensive working at weekends may not be possible, and the future of pit working is not known, but already suggestions are being made for its resumption because of the need for greater coal production. The postponement by a fortnight of the summer passenger services in the circumstances was justified, as it released some 200-250 train crews. Even so, on two days of that fortnight, 254 freight trains had to be cancelled through shortage of footplate men and guards. There is at present no indication that the basic cause of the present operating difficulties, manpower shortage, will not continue indefinitely.

As to next winter, Lord Lucas announced his view that the shortage of operating staff (which has lasted for nearly two years) will be increased by a drift from railway employment to other industries offering better pay and more attractive conditions, especially to the younger men. There is in winter only a small marginal train mileage which can be readily cut without serious inconvenience to the travelling public; but the only means of ensuring movement of essential freight traffic probably will be passenger train cuts. It is some comfort that the considerable and (on the whole) judicious curtailment of services last winter, caused by coal shortage and requested by the Government, resulted in comparatively small reductions in passenger receipts. No real short-term cure for the railway staff shortage, which affects permanent-way as well as operating grades, has yet been found. In our June 22 issue we suggested that deferment of conscription for railwaymen would be the most effective single palliative. The demand by one peer in the course of the debate for exemption was countered by the inevitable reference to the impracticability of exempting men in a particular industry, although the precedent has already been set by some classes of mine-workers. Thus the Government apparently intends to let the railways, despite their strategic and economic importance, shift as best they can, with passenger travel as one of the consumer goods which must be in short supply during the rearmament and export drives. Wage increases and improvement in conditions are rather naturally advocated as solutions of the manpower problem by the railway trades unions, and it is significant that improvements in conditions of service, to enable the railways to compete with other employers, were recently demanded by the Associated Society of Locomotive Engineers & Firemen, which drew attention to the gravity of the shortage of footplate staff.

Apart from Lord Lucas' statements, the debate was in-

conclusive. The accusation by one speaker of lack of liaison between the Ministries of Transport and of Fuel & Power as regards the coal economy measures last winter, may have some point, but perhaps overlooks the speed with which coal shortages arise. The Railway Executive had no alternative but to effect the coal economies required of it by the Minister of Transport, which took the only possible form, of reducing passenger train mileage. With a long-standing manpower, as against a coal, shortage, there is now, as we remarked recently, ample warning of what is likely to happen next winter.

The passenger publicity of the Railway Executive, and notably the now familiar series of "Biff" and "Buff" advertisements, were criticised in the debate as regards both an alleged discrepancy between the invitation to the public to travel and the necessity to curtail travel facilities, and the general tone of the publicity. The relevant factors regarding the supposed discrepancy were discussed in an editorial article in our June 8 issue, in which we suggested that it would have been better to have tried, even over a period of a few days, to bring the railways' difficulties before the public before announcing the postponement of the summer train services. As to the tone of publicity, Lord Lucas delivered himself of his personal view that "Biff" and "Buff" is not the way to get business; the object of the publicity, however, was misunderstood by the peer who said that this was not the "stuff that the skilled railway worker appreciates." It was not designed for railwaymen, but for the travelling public. At least it appears to have attracted attention.

The allusion in the debate to the cost of Railway Executive and of the British Railways' share of British Transport Commission salaries displays an ignorance which is the more strange in that it was made without previous attempt at confirmation. To many, some £40,000 total annual remuneration—with the present cost of living—for the Members of the Railway Executive, with some £23,000 for the railway share of the British Transport Commission, must seem moderate indeed. It is a strange reflection on the present organisation of nationalised transport and current beliefs concerning it that a legislator should have thought the relevant figure to be £750,000.

Steel Supplies

GOVERNMENT policy as regards the supply of steel for rearmament and other essential purposes is slowly taking shape. Allocation schemes are being prepared for iron and steel—(though sheet steel and tinplate are already controlled)—and it is thought that these will be in force by the end of this year. Meanwhile the two interim measures of the D.O. symbol and the P.T. scheme are to be applied.

The former is essentially a means of recognising defence orders and with it goes the procedure devised by the Ministry of Supply for ensuring that steel suppliers reserve a proportion of their output for D.O. orders; such orders will not in general absorb a large part of available supplies, and the Government hopes that the consequent reduction in steel supplies for other purposes will be distributed among all customers in relation to the importance of the non-D.O. work they have in hand. The P.T. ("Preferential Treatment") scheme is intended to safeguard certain categories of civilian production whilst the allocation schemes are being worked out. The categories embrace dollar and sterling exports, and it is satisfactory to hear from the Minister of Supply that locomotives and other railway material are specifically included. Government Departments "sponsoring" export and other essential orders will claim preferential treatment for goods for which iron and steel are required, with strict limits on the amount of orders for which P.T. may be claimed. This scheme therefore is largely meant to cope with difficulties caused by lack of comparatively small amounts of iron and steel.

In introducing these interim schemes at the present time, the Government emphasises that there has been no recent deterioration in the situation regarding the supply of steel.

The production of steel, according to the Chancellor of the Exchequer, Mr. Hugh Gaitskell, in his statement last week in the House of Commons, is not likely to fall seriously below last year's record; output this year is expected to be 16,000,000 tons. The situation, however, is by no means satisfactory, and is expected to remain precarious for a long time, in view of the long-term allocation scheme.

Some sort of control of steel supplies is necessary though not perhaps in the form it is taking; and although it may give rise to complaints in industry, control seems to have been requested. It is hard to see, in that case, why the interim schemes at least were not introduced earlier. It is perhaps as well that control of iron and steel supplies are to remain with the Ministry of Supply, and not to be transferred to the proposed new Ministry of Materials. At a time when co-operation on the part of all concerned is so necessary, it is regrettable that the Minister of Supply, Mr. G. R. Strauss, should have become embroiled in a dispute of his own making with the privately-owned firms in the British Iron & Steel Federation. The co-operation of industry however can be counted on in making the new controls a success. Not the least satisfactory feature (in the light of intensified rearmament) is the emphasis laid by the Government on the importance of exports. It is to be hoped that Governmental optimism as to the possibility of executing export orders will be justified.

British Transport Commission Traffic Receipts

BRITISH Railways passenger receipts for the sixth four-weekly statistical period of the year (May 20-June 17) were, at £8.62 million, some 9 per cent. down on Period 6 of 1950, for which the incidence of Whitsun during this period last year is only partly responsible. For the aggregate of nearly half the year (24 weeks), 1951 shows a decrease of nearly 4 per cent. in passenger takings, compared with a decrease of 2.7 per cent. for the aggregate of 20 weeks noted in our June 8 issue.

	Four weeks to June 17		Incr. or decr.	Aggregate for 24 weeks		Incr. or decr.
	1951	1950		1951	1950	
British Railways—	£000	£000		£000	£000	
Passengers	8,620	9,432	- 812	42,470	44,219	- 1,749
Parcels, etc., by passenger train	2,592	2,441	+ 151	14,752	14,267	+ 1,485
Merchandise & livestock	8,179	6,903	+ 1,276	44,704	38,790	+ 5,914
Minerals	2,946	2,591	+ 355	16,242	14,418	+ 1,824
Coal & coke	7,491	6,123	+ 1,368	41,515	33,908	+ 7,607
	29,828	27,490	+ 2,338	159,683	144,602	+ 15,081
Road Passenger Transport:						
Provincial & Scottish—						
Buses, coaches & trolley-buses	3,423	3,194	+ 229	17,754	16,012	+ 1,742
London Transport—						
Railways	1,234	1,082	+ 152	7,322	6,635	+ 687
Buses & coaches	2,725	2,498	+ 227	14,903	14,121	+ 782
Trolleybuses & trams	770	828	- 58	4,514	4,909	- 395
	4,729	4,408	+ 321	26,739	25,665	+ 1,074
Inland Waterways—						
Tolls	72	63	+ 9	389	325	+ 64
Freight charges, etc.	79	69	+ 10	399	388	+ 11
	151	132	+ 19	788	713	+ 75
Total	38,131	35,224	+ 2,907	204,964	186,992	+ 17,972

Comparison with last year in respect of freight traffic is complicated by the rate increases of 16½ per cent. on May 15, 1950, and of 10 per cent. on April 16 last. For Period 6, merchandise and livestock receipts were up by 18.4 per cent., minerals by 13.7 per cent., and coal by 22.8 per cent. on last year, which show real increases in traffic; as Period 6 began after the May rate increase last year, only the 10 per cent. increase of April last must be taken into account. Whilst the increased coal output was to be expected, there is as yet (pending further detailed results) no clear explanation for the sharp rise in merchandise and livestock traffic. The rate increase of May,

1950, makes difficult any consideration of aggregates; but the increase of 22.4 per cent. over last year in coal receipts for 24 weeks, bearing in mind that last year's rate increase was not until the twentieth week, points to a substantial increase in coal carryings.

London Transport railway receipts slightly exceed those for last year, both for Period 6 (14 per cent.) and for the aggregate (10 per cent.), but the London Passenger Charges Scheme, effective from last autumn, detracts from the value of any comparison. By October 1 next, after one year's operation of this scheme, the B.T.C. Passenger Charges Scheme, 1951, due for hearing very shortly, and affecting both London Transport and British Railways, may possibly be effective. The slight increase over last year in B.T.C. provincial and Scottish bus receipts is apparently due to alterations in fares.

The activities shown in the advance figures of receipts for Period 6 account for some 80 per cent. of total B.T.C. takings; the chief item omitted from the advance figures is British Road Services, which with monthly receipts at some £6,000,000, is the second largest source of the Commission's receipts.

PERCENTAGE VARIATION 1951 COMPARED WITH 1950

	4 weeks to June 17	24 weeks to June 17
British Railways—		
Passengers	- 8.6	- 3.9
Parcels	+ 6.1	+ 11.1
Merchandise & livestock	+ 18.4	+ 15.2
Minerals	+ 13.7	+ 12.6
Coal & coke	+ 22.8	+ 22.4
Total	+ 8.5	+ 10.4
Road Passenger Transport	+ 7.1	+ 10.8
London Transport—		
Railways	+ 14.0	+ 10.3
Buses & coaches	+ 9.0	+ 5.5
Trolleybuses & trams	- 7.0	- 8.0
Total	+ 7.2	+ 4.1
Inland Waterways	+ 14.4	+ 10.5
Aggregate	+ 8.2	+ 9.6

Modernising the Spanish Railways

IN May, 1949, the Spanish Government approved a far-reaching plan for the reconstruction and modernisation of the Spanish railways. In view of the importance of the plan to the national economy, the Spanish National Railways have produced a book* covering all important recent developments as well as those provided for in the new programme.

Trunk lines are to be modernised to permit the speeds, safety, and frequency required for a good, rapid, and economic service, and secondary lines are to be improved. New standard steam locomotives are to be built, over-age coaches and wagons replaced, and workshops and carriage sheds extended. More lines, especially in mountainous districts, are to be electrified, and the numbers of fast diesel railcars and of the Talgo articulated trains are to be increased.

The acquisition of 6,325 new wagons, equipped with brakes and the strengthening of another 17,000 wagons, and improved wagon maintenance will enable the average load and overall speed of freight trains to be increased, with corresponding reduction in turnaround time. Telecommunications will be completely renewed and signalling modernised, especially at the main stations.

All these improvements it is claimed will enable greatly increased traffic to be handled without necessitating changes in the staff establishment; and reduce the unit cost of transport. The plan cannot be carried out entirely without foreign assistance, but some 80 per cent. of the materials to be acquired will be Spanish. The amount to be spent abroad is estimated at 70,000,000 dollars (£25,000,000), spread evenly over five years as part of the ordinary foreign currency clearing transactions.

The full benefit will be secured only when the pro-

* Red Nacional de los Ferrocarriles Españoles—Desarrollo de su Plan General de Reconstrucción (Spanish National Railways—Development of General Reconstruction Plan). Spanish National Railways. Madrid. 10 in. x 8 in. 214 pp. Illustrated

gramme is completed in, it is hoped, about three years' time. Meanwhile, two of the measures in the plan, the electrification of the steeply-graded section from Torre Brañuelas on the Leon-Ponferrada line, and the introduction of more braked freight trains, have already brought advantages. The capacity of the Torre-Brañuelas section, formerly a bottleneck on an important line carrying heavy coal traffic, has been tripled by the electrification. The resulting economy in operation is so great that the cost of electrification, some 30,000,000 pesetas (£980,000), has been recouped in a year.

The introduction of modern goods wagons, some constructed in Spain and others in the United States, has made it possible to reduce the round-trip time by 30 per cent. The cost of the 750 American wagons, 35,000,000 pesetas (£1,140,000), is being recovered within two years from the economy effected. It is estimated that the eventual direct savings from all the proposed measures combined will amount to 700,000,000 pesetas (£22,900,000) a year, to which must be added some 450,000,000 pesetas (£14,700,000) in potential savings based on the greatly increased traffic which the modernised system will be able to handle. The total must be set against the total cost of the scheme, which is 4,490 million pesetas (£146,500,000). It is therefore expected that the plan will have paid for itself in a few years, and that it will safeguard the solvency and economic self-sufficiency of the National Railways. Since the end of the civil war the railways have some notable achievements to their credit, including the reconstruction of numerous bridges, reduction in running times and wagon turnround, and the electrification of 228 single-track miles.

Generally, the geography of the Spanish railways favours efficient operation. Madrid is the geometrical centre of the country, almost equidistant from the large towns at the periphery. Some 80 per cent. of the total traffic is carried on radial trunk lines, and the remainder of the traffic is spread over many secondary and cross-country lines. The trunk lines cross important mountain ranges. When they are electrified the railways will have little to fear from the competition of road vehicles negotiating steep and winding mountain roads. The railways are therefore likely to remain the natural main arteries of traffic, with road transport carrying feeder and cross-country traffic which the railways can cater for only at a loss. Another economic aspect of national importance is the saving in coal expected from the electrification programme.

One item meriting special attention is the performance of the Talgo articulated trains which, since July 14, 1950, have been used regularly on the Madrid-Hendaye and Irun-Madrid runs in connection with the Paris-Pyrenees Express. Compared with the ordinary trains previously worked on this route, the running time has been reduced by almost one-third. The Madrid-Hendaye trip takes 9 hr., corresponding to an overall average speed of nearly 50 m.p.h. The maximum speed is 81 m.p.h. On this schedule, the average late running of this train since its inauguration has been no more than four minutes.

Indian Main-Line Passenger Services

THE April, 1951, issue of *Indian Bradshaw* shows that the principal developments in passenger train services in India and Pakistan are the increase in the number of main-line services and the introduction in India of *Janata* ("people's", third class only) expresses, some of the latter being smartly timed in view of the considerable number of stops. There are no striking accelerations, though certain fast trains, such as the "Frontier Mail" on the Bombay Baroda & Central India Railway (broad gauge) and the Calcutta-Bombay and Calcutta-Madras mails on the Bengal Nagpur are now smartly timed. In general, services are being slowly brought back to pre-war levels, which they surpass in a few cases. In the table below, services are compared with those of July, 1949, which were reviewed in our September 23 issue of that year. The distances shown in the table are those given by *Indian Bradshaw*.

There are now very few inter-Dominion through services between India and Pakistan. As regards Western Pakistan, the through trains from Calcutta and Bombay which formerly ran to Lahore and Peshawar now terminate at Amritsar or Ferozepore, or continue beyond Amritsar to Pathankot, the principal Indian railhead for Kashmir. In the case of Eastern Pakistan, the position has been changed radically by the opening to passenger traffic on January 26, 1950, of the Assam Rail Link (described in our issue of July 7, 1950).

Through passengers for Assam now travel by the "Assam Link Express" (broad gauge) from Calcutta Sealdah over the East Indian Railway to Sakrigali Ghat, and cross the Ganges by ferry to Manihari Ghat, whence there is a daily through train (metre gauge) over the Oudh & Tirhut and Assam Railways via the new Link to Amingaon, with connections via the Amingaon-Pandu ferry (as before) to Gauhati, Shillong, and North-East Assam. This route avoids Pakistan territory. The fastest service from Calcutta to Amingaon via the Assam Link takes some 42 hr. against slightly over 17 hr. via Parbatipur before Partition. It is not clear what through services now exist between Western (India) and Eastern (Pakistan) Bengal and Assam. The situation in this region is also complicated by the recent earthquake in the Brahmaputra valley and the conversion to metre gauge now proceeding of the broad-gauge section of the Eastern Bengal Railway in Eastern Pakistan.

Introduction of many new air services both in Bengal and Assam and elsewhere in the two Dominions may, by absorbing potential upper-class passenger traffic, remove the cause of any considerable train accelerations, though dieselisation in Western Pakistan is expected to result in faster running. Some long-distance services include air-conditioned coaches; *Indian Bradshaw* however does not indicate what restaurant or refreshment car facilities are now provided. Much information is given on many complicated cross-country connections within either Dominion.

Railway	From	To	Miles	Time		Remarks
				July, 1949	April, 1951	
				Hr. Min.	Hr. Min.	
India						
G.I.P., E.I. ...	Bombay Victoria ...	Calcutta Howrah ...	1,349	41 15	41 20	Via Jubbulpore.
G.I.P., B.N. ...	Bombay Victoria ...	Calcutta Howrah ...	1,223	41 20	38 30	Via Nagpur.
B.B.C.I. ...	Bombay Central ...	Delhi Junction ...	861	26 50	24 50	"Frontier Mail."
G.I.P., M.S.M. ...	Bombay Victoria ...	Madras Central ...	794	29 45	29 25	"Madras Express."
G.I.P. ...	Calcutta Howrah ...	Poona ...	119	3 10	3 10	"Deccan Queen."
E.I., E.P. ...	Calcutta Howrah ...	Ambala Cantonment ...	989	34 33	32 53	Via Lucknow. "Punjab Mail."
E.I. ...	Calcutta Howrah ...	Delhi Junction ...	902	25 50	26 00	Via Kanpur (Cawnpore).
B.N., M.S.M. ...	Calcutta Howrah ...	Madras Central ...	1,032	41 20	37 20	Via Waltair.
G.I.P., N.S., M.S.M. ...	Delhi Junction ...	Madras Central ...	1,361	47 05	48 35	Via Itarsi, Nagpur and Bezwada. "Grand Trunk Express."
S.I., C.G. ...	Madras Egmore ...	Colombo Fort ...	650*	35 15	35 40	Includes immigration, etc., formalities, and Palk Strait crossing about 2½ hr. (Dhanushkodi—Talaimannar).
Pakistan						
N.W. ...	Karachi City ...	Lahore Junction ...	755	24 30	24 20	"Pakistan Mail."

* Approximate distance

Note: The M.S.M., N.S., and S.I. Railways were absorbed into the Southern Railway on April 14, 1951

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Wagon and Train Loads

June 25

SIR,—The closing paragraphs of your June 22 article on "The Railway Crisis" will please readers who served on the North Eastern Railway during Sir George Gibb's consulship. Your figures show that since the 1923 amalgamation our railways have followed, with hesitating footsteps be it said, the lead which he gave 50 years ago by installing high-capacity wagons and powerful freight locomotives. He saw that, without mobility, heavy train loads might become a hindrance. That is especially apt to happen in a period of mounting traffic volume, when wagon and train loads can be increased readily but tend to move more slowly.

The U.S.A. operating statistics for February provide an instructive example of these tendencies. The table below sets out seven statistics for the Pennsylvania Railroad, the New York Central and the Santa Fe. The figures in brackets after the entries give the percentage variation from February, 1950.

FREIGHT OPERATING STATISTICS—FEBRUARY, 1951

	P.R.R.	N.Y.C.	Santa Fe
1. Ton-miles (millions) ...	3,768 (+39)	3,102 (+33)	2,580 (+26)
2. Ton miles per mile of road per day ...	13,398 (+39)	10,377 (+33)	7,055 (+26)
3. Train miles (thousands) ...	2,725 (+20)	2,567 (+16)	2,319 (+22)
4. Wagon load (short tons) ...	32.7 (+13)	32.9 (+16)	26.4 (+0.3)
5. Train load (short tons) ...	1,437 (+16)	1,232 (+15)	1,118 (+3.0)
6. Locomotive miles per day ...	95 (+15)	84 (+23)	110 (+27)
7. Train speed (miles per hour) ...	14.0 (-10)	14.8 (-9.0)	21.1 (+1.0)

The Pennsylvania, with the densest traffic, had the largest increase in what was the heaviest train load in 1950, but its train speed fell to the low level of 14 m.p.h. The New York Central had the largest wagon load and added 15 per cent. to its train load at the price of a 9 per cent. drop in speed. With slightly larger wagon and train loads, the Santa Fe ran 22 per cent. more train miles, got 27 per cent. more mileage from its locomotives and raised its speed by 1 per cent. to 21.1 m.p.h. The heavy lines in the Eastern Region thus lost mobility, while the light Western line worked more freely and presumably satisfied its customers better.

Too much stress should not be laid on one month's results, particularly as traffics were reduced in February, 1950, by labour disputes. Traffics and working conditions on the three railways also differ widely. The comparison does indicate, however, that the size of wagon and train loads is not by itself a conclusive test of efficiency. The Eastern railroads are struggling with financial problems, whereas the Santa Fe has a much lower operating ratio and a healthy net railway operating income.

Yours faithfully,

R. BELL

Knaresborough, Yorkshire

Gauge Standardisation

May 30

SIR,—The decision to standardise broad and metre gauges in Argentina and to convert the 4 ft. 8½ in. lines to metre-gauge would be logical only if Argentina, or even South America, could be considered an isolated unit. There are no advantages which the broad gauge can offer in Argentina, which have not been realised by the narrower, standard (4 ft. 8½ in.) gauge in North America. In the immediate future, physical connection with the 4 ft. 8½ in. gauge railways of Uruguay is precluded, and who is to say that South America will not one day develop in like manner to the North and need a comparable railway system, or that there will not one day be a through rail link through Panama between these two great continents?

The long-term policy ought to be the conversion of the

broad to standard gauge, which would not reduce the loading capacity or speed (as will happen when the 4 ft. 8½ in. is converted to metre), and would give the benefit of the availability of standard productions in Europe and North America. The metre gauge should be retained for the present where it is in use, but new lines should be built with standard gauge clearances to facilitate future conversion.

All over the world the break-of-gauge problem arises because men have been unable to see beyond the needs of their own generation. Conversion of lines in Spain has been proposed. In Eastern Europe, before the war, attempts were made to equip vehicles to run both on Russian and European tracks, and the break was never an asset to Russia when it was invaded. In Australia, gauge unification is now in progress. In Africa, it is an imminent problem for the link between Rhodesia and East Africa, and it will come up one day in the Sudan or Egypt. Links by rail are proposed between India and Iran, but their estimated value is reduced by break-of-gauge.

No one expects that there is ever likely to be much through rail traffic between Alaska and Patagonia, any more than between the Cape and Cairo, but wherever a break of gauge occurs there will always be traffic offering between one side of that break and the other and requiring to be transhipped.

Yours faithfully,

R. G. R. CALVERT

c/o Westminster Bank Limited, Bexleyheath

[Although the East African Railways are at present metre-gauge, the track is laid and all new rolling stock is constructed to allow of easy conversion to the 3 ft. 6 in. gauge, in view of the projected connection through Tanganyika with the Rhodesian system which is now being surveyed.—Ed., R.G.]

Services in the Forest of Dean

June 17

SIR,—On a recent Saturday an excursion was run from Parkend and Whitecroft stations, on the line from Lydney to Coleford and Lydbrook, to Weston-super-Mare. Regular passenger trains ceased to run beyond Lydney in 1929.

Although I was not able to see the train myself I gather that it was reasonably well patronised. The patronage might have been greater if the bookings at Parkend and Whitecroft had been advertised by official posters and bills instead of by local, partly handwritten notice. The only official bills and posters issued showed the excursion as starting from Lydney Town.

Now that the people of this not thinly populated part of the Forest of Dean have been made a bit more "rail conscious" than hitherto, it may be worth while experimenting with giving them a regular passenger service. This could be done without any increase in manpower by extending the Berkeley Road-Lydney auto-train to Parkend; it usually has a long wait at Lydney Town before returning to Berkeley Road.

Whilst on the subject of the Forest of Dean lines I must mention also the special diesel car trips which have been run through the Forest of Dean for railway enthusiasts. These trips are of great scenic interest as well and there is an opportunity for their scope to be extended to those other than railway enthusiasts, particularly as diesel cars are more comfortable and provide more leg room than any motorcoach.

Yours truly,

J. F. BURRELL

80, Longmead Avenue, Bristol 7

THE SCRAP HEAP

Manx Pride

In the Isle of Man there is still a private enterprise railway. The paint on its engines is spotless and the brass domes are polished. Some of the little engines are 40 years old, but they are superbly maintained.—*From a letter to "The Evening News."*

No Train Parking Here

Engine drivers can get parking summonses here if trains block a crossing for more than five minutes. The Southern Pacific Railway has been fined £3 for breaking this rule eight times.—*From the "Evening Standard."*

G.W.R.

The writers who appeal for the retention of "Great Western" as the name for the system that nationalisation is trying to call Western Region (see last week's Scrap Heap) have an immense weight of tradition on their side. The Great Western alone of all the main-line companies carried its original name through the amalgamations of 1922. Why . . . whoever it is decides these things wanted to turn all our railways into "Regions" is not easy to fathom. Perhaps it would not have done to keep one "Great" outstanding in a nationalised equality. But . . . the West Country writers need not worry much. People will go on talking about the Great Western, just as they do about the Midland and the L. & Y., for at least another generation, and perhaps a century. And the chalk

scrawl "G.W." on a railway truck will probably still have meaning when locomotives are being driven by atomic energy.—*From "The Manchester Guardian."*

Glamour Comes to Ballyglunin

Thomas Niland, who runs "the prettiest little station in the West," is going on the films. So is his station, Ballyglunin, and a "period" railway engine.

Tom has given Ballyglunin a glamour brush-up. The engine, four coaches and a guard's van wait in Galway city rail terminus. They expect to be called on location in a week or so by John Ford who is shooting "The Quiet Man."

Last week the train made a test run through Ballyglunin—14 trains passing through every day—which has won a prize as the best kept on the line.—*From the "Sunday Express."*

Holyhead to Dublin

In a recent letter to *The Times* a correspondent stated that cabins in the Holyhead—Dun Laoghaire steamers (one of the oldest railway marine services in the world, connecting with the "Irish Mail," the world's oldest named train) alone of British Railways Irish and Continental services, must be reserved by application to the port, and not to London.

In reply, Mr. George Dow, Public Relations & Publicity Officer, London Midland Region, has pointed out that the large amount of traffic via Holy-

head originating in the Midlands and North necessitated concentration of reservations on Holyhead. The allocation of cabins for reservation in London is, however, again under consideration.

After You, Hove

For years rivalry has existed between Brighton and Hove over which name should come first on the railway posters. Now a happy compromise has been reached. British Railways are to issue two posters a year. On one will be a picture of the Royal Pavilion, Brighton, under the title "Brighton and Hove." On the other will be a picture of the King Alfred sports centre, Hove, under the title "Hove and Brighton."—*From the "Daily Mail."*

An Hour of Fame

For a brief spell Steventon became famous in the railway world as a serious rival to Paddington for the honour of being the headquarters of the G.W.R. A scheme for consolidating the former London and Bristol committees, at a single headquarters, led to the choice of Steventon, which is conveniently situated between the two places. Plans were made by Brunel for the superintendent's house to be altered, and the directors met there from July, 1842, until January, 1843. They then decided to return to London and voted Paddington back into its own. Thus ended Steventon's brief hour of railway fame.—*From the "British Railways Magazine."*

Government Railways ?



"G.R." heading to advertisement board at Chippenham Station in the Western Region. The clock, which obscures the letter "W," has been removed since the photograph reproduced above was taken earlier this year, displaying the legend "G.W.R."

Photo]

[D. J. W. Brough

Knocking Off

Customs die hard, but one more link has gone,
No longer sounds the "rat-tat-tat" at dawn,
As on his thankless task a form forlorn,
Steals through the silent streets to greet the morn.

This witching hour will soon be the domain
Of the lone watchdog, rattling at his chain,
Or of that frightful fowl, whose raucous tongue
Shatters a sleeping world with unsought song.

It never has been quite explained to me
Who knocks the "knocker" up—a mystery
Recalling those time-honoured wrangles when
Men argued which came first, the egg or hen.

"Good-bye, old knocker-up—true friend you've been,
This age, alas, belongs to the machine;
Now, at odd times, in varying tone and key,
Tin clocks will scream 'Get up—it's half-past three!'"

A. B.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Prospect Goods Depot

The bulk of railway goods traffic to and from Johannesburg can now be handled at Prospect, the new goods yard on the eastern outskirts of the city. The yard has been built at a total estimated cost of £24,000,000 of which £3,400,000 has already been spent. It was begun in 1938 but, because of the war, work was suspended in 1941 and was resumed in 1945. The depot was due to be officially opened by the Minister of Transport in June.

From the end of 1946 most of the received traffic for Johannesburg was transferred from Kazerne, the old depot, to Prospect. The construction of the new depot forms part of the major scheme to relieve congestion at Johannesburg and Kazerne and to segregate passenger and goods trains. Livestock, traffic for the municipal market, and goods consigned to and from the existing warehouse block sidings, and private sidings, will still be dealt with at Kazerne.

The new marshalling yard at Prospect incorporates the latest mechanical devices for the sorting and handling of traffic, and is the first fully mechanised marshalling yard in the Union. The yard has three distinct groups of sidings where trains carrying all classes of mixed goods traffic to and from the Johannesburg area are handled. Outward bound traffic passes over the hump to the classification yards.

EAST AFRICA

Transport Advisory Council Meeting

A special meeting of the Transport Advisory Council was held in Kampala, Uganda, on June 11. The Council recommended that a Bill to authorise the raising of a loan of £3,500,000 for the acquisition of additional rolling stock should be submitted to the next meeting of the East African Central Legislative Assembly. It was also recommended that two 10-ton portal cranes should be acquired for the newly-developed stacking area at Mombasa, at a cost of £49,000 and that an expenditure of £54,200 should be sanctioned for the completion of the lighter wharf extension and ancillary works at Dar-es-Salaam. The expenditure of £780,000 in respect of the purchase of new rolling stock was also recommended.

Traffic Receipts and Tonnages

Receipts from all services, including railways, harbours, road services, inland waterways and ancillary services, for the first quarter of 1951 amounted to £3,053,804, an increase of more than £300,000 over the first quarter of the previous year. Total working expen-

diture during the same period, including contributions to the renewals fund, was £2,266,168. The rise in the level of earnings is reflected in the volume of traffic carried. During the first three months of 1951, 1,116,606 tons was moved as compared with 930,533 tons for the same period in 1950.

ARGENTINA

Bahia Blanca North Western Transfer

An order to transfer the remaining lines of the Bahia Blanca North Western to the D.F. Sarmiento Railway has been countermanded and the handing over indefinitely postponed. The reason is stated to be that there would be no financial benefit to the D.F. Sarmiento Railway as under the new proposed organisation all railway revenue would be pooled between the regions.

Diesel Services

The Ganz diesel units which originally operated between Patagones and San Carlos de Bariloche, later between Buenos Aires (Plaza Constitucion) and Bahia Blanca, and latterly on the Necochea line are now out of service. The Necochea service was worked last summer with one unit; the other was in for repairs after a derailment. The available unit was scheduled to work a bi-weekly double trip between Plaza Constitucion and Mar del Plata in 4½ hr. each way, but this was cancelled because of the decision by the Ministry to decelerate all passenger services, in view of the critical fuel situation.

Winter Timetable

Because of the fuel situation the inauguration of the winter timetable has been deferred and it is now expected to come into force in the second half of July. Meanwhile an amended summer timetable is in force.

EGYPT

Electrification of Cairo Suburban Lines

Amongst the important projects now under examination is that of electrifying the Cairo-Marg and Bab-el-Luk-Helwan suburban lines.

Diesel-Electric Trains

Four of the nineteen 800 h.p. diesel-electric streamline trains ordered from the English Electric Export & Trading Co. Ltd., have been delivered and are now in service between Cairo and Alexandria, and Cairo and Port Said.

Each train, as stated in an article in our December 15, 1950 issue, is composed of five articulated coaches with a total seating capacity of 172 passengers (60 first class and 112 second class). The first class portion is fully air-conditioned.

The trains run between Cairo and

Alexandria, with two intermediate stops, in 2 hr. 15 min. and between Cairo and Port Said in 2 hr. 55 min. First class passengers are required to pay only the ordinary fee, 30 piastres, for air-conditioned coaches; second class pay 50 per cent. on the ordinary fares. Seats may be reserved in advance.

IRELAND

Liffey Bridge Renewal

The bridge carrying the Cork main line over the Liffey at Sallins will be renewed in the autumn. The existing two-span lattice girder structure with timber decking is being replaced by one of plate girders with plate deck floor and ballasted track.

The design and detail drawings were prepared by the Chief Engineer's Department of C.I.E. and the eight girders have been fabricated by Robinson & Kershaw Limited, Manchester. Each girder weighs 16 tons and is 78½ ft. long; two have already been unloaded at North Wall, Dublin. The remaining steelwork is being fabricated in Ireland.

FRANCE

Standard Motorcar Adapted as Trolley

To avoid the cost of new inspection motor trolleys, the S.N.C.F. has decided to purchase a number of La Prairie 14-h.p. standard model Renault motorcars, a type easily adaptable for rail service. The normal road wheels are replaced by flanged wheels fitted with solid rubber tyres. Other changes include a light alloy body and under the chassis a turntable worked by a hand-operated hydraulic jack, enabling the car to be hoisted for turning on the rails and for changing from rail to road wheels.

The car seats six persons and has space for accommodating three more, or for baggage or other material. Trial runs on rails gave the following results: power, 14 h.p.; capacity, nine persons, or six persons and 1,760 lb. of material; speed nearly 60 m.p.h., but limited to 35 m.p.h. for light vehicles; time for changing wheels, 15 min.; time for turning car on rails by one man, 1½ min.

This adaptation of a standard car to run on rails is considered most successful. It is thought that it should enable the S.N.C.F. to replace its old stock of light inspection cars on an economical scale.

New Stock for Paris Metro

Trials of the first train of the new rolling stock for the Paris Metropolitan Railway will be made on a suburban line before the end of the year, according to the French press. As was indicated in our August 18, 1940 issue, the R.A.T.P. (Régie Autonome des Transports Parisiens) is proceeding with the construction of new cars intended gradually to

replace existing cars, many of which have been running for nearly 40 years.

Six-car trains instead of five will be run at rush hours; each will be made up of two three-car articulated sets on four bogies. At other times three-car units will be operated. The new trains will have more and wider sliding doors to save time at crowded station platforms.

The first orders under the modernisation plan will comprise 100 trains, or 200 articulated units, at an estimated cost of fr. 9,000 million (about £9,000,000). They are intended to replace in ten years all the rolling stock built between 1908 and 1913. The plan

provides for the construction in the following ten years of 300 trains to replace cars built between 1920 and 1935. Loans are to be raised to finance the new material. Economies effected under the new system, it is estimated, will aid payment of interest on the loans, apart from special credits in the R.A.T.P. budget allocated to the modernisation plan.

WESTERN GERMANY

Welded Track at Hamburg

Last summer the Hamburg Directorate of the Federal Railways carried out the wholesale aluminium-thermit

welding of a group of important main line tracks at Harburg Station, including four through tracks and 50 points.

The saving in first cost from eliminating track fastenings, including some sleepers, and in maintenance cost is said to be considerable. In addition, there is the reduction of noise, especially that made by suburban double-deck trains serving Harburg, has been so marked that permanent way staff had to be warned not to rely on the sound indication of an approaching train. A prerequisite for the success is the expert execution of the thermit welding, with due regard to the ambient temperature at the time.

The Steam Locomotive of Today: Its Construction, Operation, and Upkeep. By P. Sells. London: The Locomotive Publishing Co. Ltd., 88, Horseferry Road, Westminster, S.W.1 8½ in. x 5½ in. 250 pp. Illustrated. Price 10s.—The experience of the author of this book has been mainly in Rhodesia and Nigeria, and though it covers a wide field, the practice in locomotive design, maintenance, and handling with which it deals is largely of an overseas description. With this limitation, it is an admirable treatise in a small compass, including detailed descriptions of the principles of evaporation and the properties of steam; discussions on boilers, superheaters, frames, motion, wheels, and lubrication; and practical notes on the duties of enginemen and on workshop practice. There are numerous drawings to assist the exposition of the subject, which is simple and clear. There is no mention of some modern refinements of locomotive design which are now regarded as essential in countries like Great Britain and the United States, such as self-cleaning smokeboxes, rocking and drop grates, automatic stokers, manganese liners for axleboxes, boosters, and even watertroughs, and such omissions should be rectified in future editions, which might also with advantage include a more detailed index.

Route Relay Interlocking; Mile End-Stratford. Published by Metropolitan-Vickers-G.R.S., Limited, 132-135, Long Acre, London, W.C.2. 11 in. x 8½ in. 17 pp. Illustrated. Folding plate.—This booklet is an informative account of the new panel type electric interlocking installations, provided in connection with the electrification of the Eastern Region lines between London and Shenfield, at Bow, Mile End, and Stratford, with certain automatic signalling sections, as part of the complete re-signalling of this route. The same manufacturers have already provided track circuit-controlled automatic colour-light signals from Gidea Park to Shenfield and Southend. This panel working is effected on the so-called "entrance" and "exit" principle, in Great Britain previously seen only in a small installation on the former Cheshire Lines Railway near Liverpool. There

is a general explanation of this interesting form of signalbox operation and a description of the signals, track equipment, relays and power supply arrangements and other technical details. The reader gains a clear idea of the work involved in designing and installing such a comprehensive piece of signal engineering. The illustrations are well selected and touch on all aspects.

Unification of British Railways. By Members of the Railway Executive. London: Modern Transport, Norman House, 105-109, Strand, W.C.2. 9½ in. x 7 in. 64 pp. Illustrated. Paper covers. Price 2s. 6d.—Our contemporary *Modern Transport* has reprinted in book form a series of articles which have previously appeared in its columns under this title. Mr. John Elliot, Chairman of the Railway Executive, contributes a foreword, in which he pays tribute to the work of his predecessor, Sir Eustace Missenden. He points out that though economies which have derived from unification have so far been largely swallowed by rising costs, the situation would have been worse had they not been made. Six articles cover operational organisation; mechanical and electrical engineering; permanent way and signalling; stores; commercial matters; and staff and labour; and have been written by the members of the Railway Executive responsible for these functions.

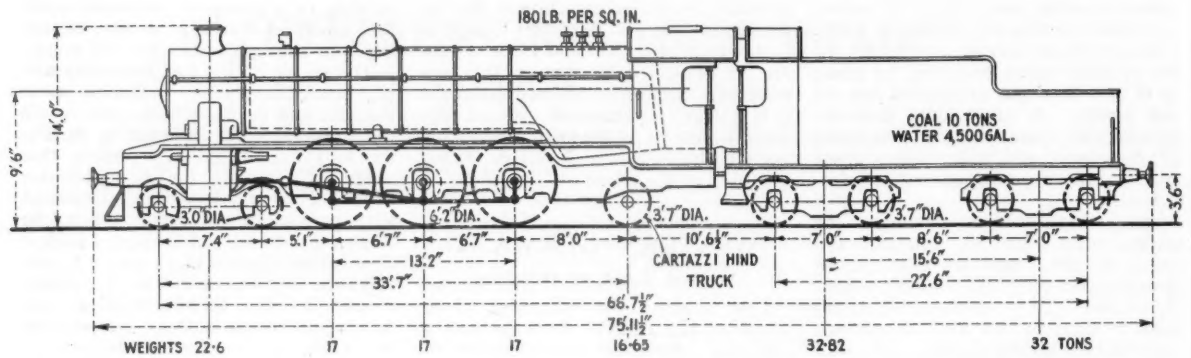
Machine Tools on Production.—An illustrated brochure of an unusually high standard, covering a wide selection of general-purpose drilling and milling machines, has been produced by *Machinery* on behalf of James Archdale & Co. Ltd., Birmingham. This is intended to further a selling campaign in the U.S.A. and Canada and the somewhat stereotyped style of illustrating engineering products has been departed from to show machines actually engaged on production work. Natural colour photographs are used for the front and back covers and also for the centre-page double spread. Brief details and specifications of Archdale machines are given in the first four pages together with the reference number of the bulletin in which a full des-

cription of a particular product can be found. Alfred Herbert Limited, Coventry, are the sole selling agents for Archdale Tools.

The Blue Train.—The Commercial Representative of the South African Railways & Harbours, South Africa House, London, W.C.2, has sent us a small folder illustrated in colour of the "Blue Train," the S.A.R. luxury express running between Cape Town, Kimberley, Johannesburg, and Pretoria. The train was built by the Metropolitan-Cammell Carriage & Wagon Co. Ltd. shortly before the war. It was suspended during the war years, but now runs twice weekly, covering the 956 miles between Cape Town and Johannesburg in slightly over 26 hr.

British Railways Continental Handbook.—All marine services to the Continent and Channel Islands operated by or in conjunction with British Railways, with their Continental passenger train connections, are shown in the summer edition of *British Railways Continental Handbook*. New features include: the "Rheingold Express" (newly revived since the war) in connection with the Harwich-Hook of Holland night service; the "Holland-Italian Express" connecting with the Hook day service; the "Tauern Express" to and from South Germany, Austria, and Yugoslavia, connecting with both Harwich-Hook and Dover-Ostend day services; the Athens branch of the "Simplon-Orient Express"; the Talgo train connection with Madrid off the "Pyrénées-Côte d'Argent Express"; and a railcar connection to Paris off the 4.30 p.m. from Victoria, with return service at 3.20 p.m. from Paris Nord.

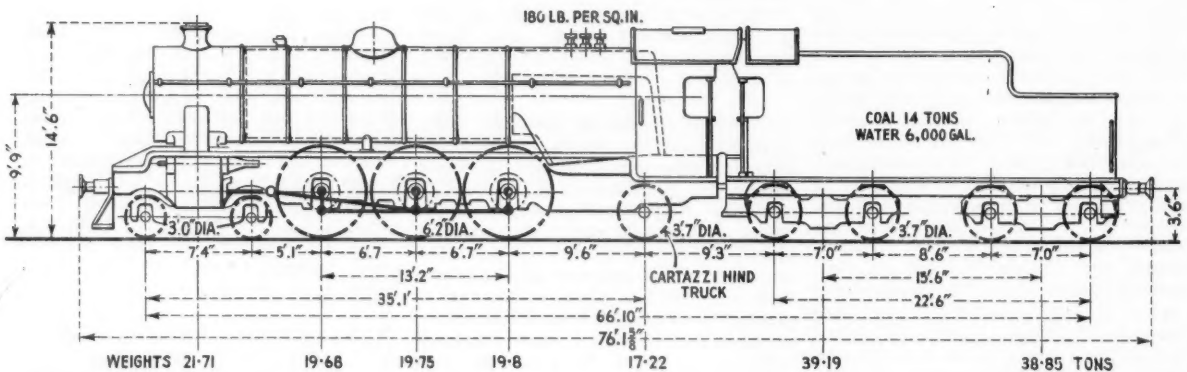
Argonarc Welding Process.—The Argonarc process for fusion welding aluminium and other alloys is described in a publication issued by the British Oxygen Co. Ltd. This is illustrated with various types of welds carried out by the Argonarc process and describes manual and mechanical methods. Also included is a general specification of the electrical power equipment, together with the type of current and equipment recommended for manual welding.



CYLINDERS, TWO 21 1/2" DIA. x 28" STR.
LENGTH BETWEEN TUBEPLATES 18'6"
GRATE AREA 45 SQ. FT.
TRACTION EFFORT AT 85% B.P. 26,760 LB.

WEIGHTS, TONS		
ENGINE	TENDER	TOTAL
LIGHT 81-65	34-64	116-29
LOADED 90-25	64-82	155-07

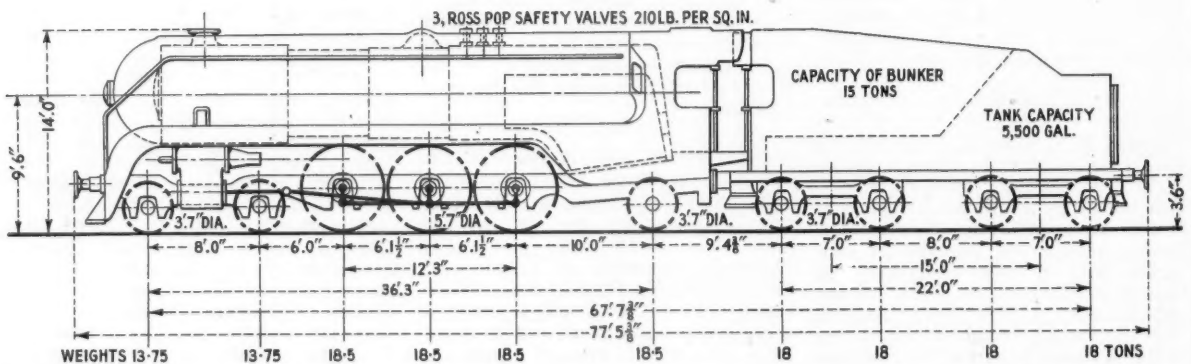
"XB" CLASS



CYLINDERS, TWO 23" DIA. x 28" STR.
LENGTH BETWEEN TUBEPLATES 18'6"
GRATE AREA 51 SQ. FT.
TRACTION EFFORT AT 85% B.P. 30,625 LB.

WEIGHTS, TONS		
ENGINE	TENDER	TOTAL
LIGHT 87-04	37-45	124-49
LOADED 98-16	78-04	176-2

"XC" CLASS



CYLINDERS, TWO 20 1/2" DIA. x 28" STR.
LENGTH BETWEEN TUBEPLATES 15'10 3/8"
GRATE AREA 46 SQ. FT.
TRACTION EFFORT AT 85% B.P. 30,600 LB.

WEIGHTS, TONS		
ENGINE	TENDER	TOTAL
LIGHT 91-875	31-741	123-616
LOADED 101-5	72-0	173-5

"WP" CLASS

Diagrams showing principal dimensions of three broad-gauge Indian Government Railways locomotives for passenger and mail services

Performance of "WP" Class Locomotives

Performance in service on the Indian railways of the new series of broad-gauge passenger engines

By G. da Costa, Senior Locomotive Designer, Indian Government Railways

THE standardisation of steam locomotives in India has made rapid progress with the introduction of four new locomotive classes during the last three years. The new classes are as follow:—

Gauge	Service	Locomotive designation	Type
5 ft. 6 in.	Passenger ...	"WP"	4-6-2
	Goods ...	"WG"	2-8-2
Metre ...	Passenger ...	"YP"	4-6-2
	Goods ...	"YG"	2-8-2

The goods and passenger locomotives have common boilers and interchangeable tenders, valve gear, hind trucks, frame steel castings, axleboxes, bearing springs, and mountings. These four locomotive classes (with two boilers) are expected eventually to haul over 70 per cent. of Indian rail traffic and to super-

seede seven locomotive classes (with seven different boilers) provided for the purpose in the first large-scale scheme of standardisation 24 years ago.

The first of the new series, the "WP" class, which supersedes the "XB" and "XC" classes, has already taken over the most important mail and express trains on the 5 ft. 6 in. gauge. These locomotives have completed 9,000,000 miles on six different railways and have acquired a reputation for free-steaming and good timekeeping, for economy in fuel, and for excellent riding qualities.

Design Problems

Special interest attaches to this locomotive because it embodies the results of several years of research on boiler efficiency with Indian non-coking coals, on valve gear, and on the lateral reac-

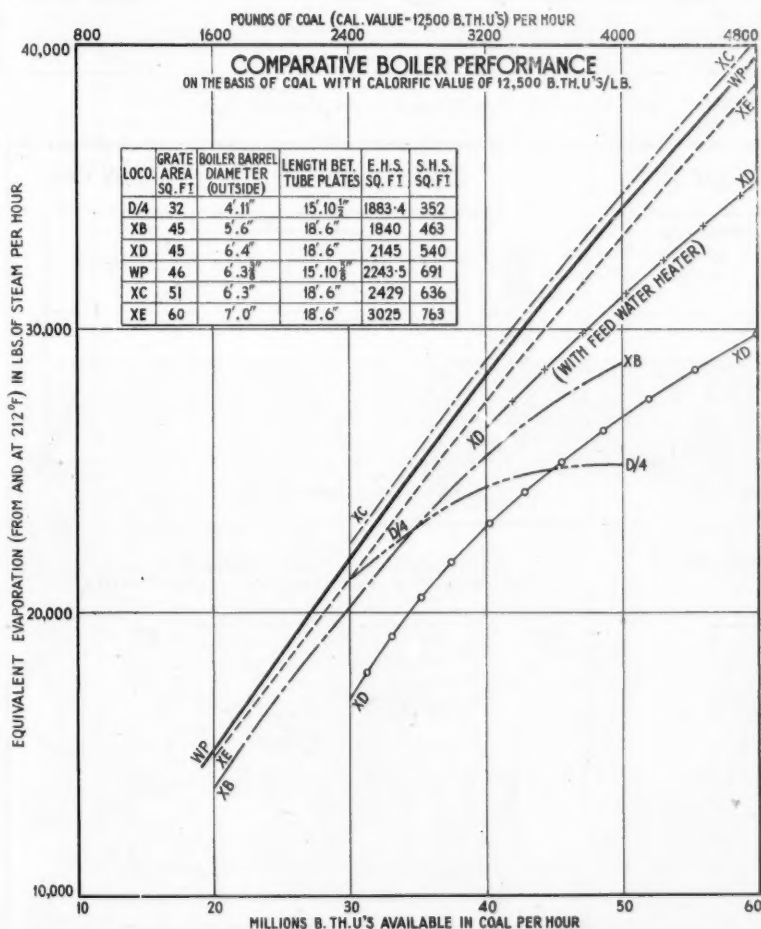
tions of locomotives at speed on different tracks. The problem for the designers was to produce an 18.5-ton axleload locomotive which, though burning non-coking coals of moderate calorific value (11,000 to 12,500 btu/lb), would surpass the "XC" locomotive (axleload 19.7 tons) in performance.

There have been no spectacular departures from conventional design, and all the features of proven reliability in earlier designs have been retained. A larger firebox volume and free gas area, moderate increases in superheat, improved steam distribution and more liberal steam passages have been exploited to obtain improved performance, and the wheel spacing, weight, distribution, and truck controls have been carefully designed to ensure relatively low stresses in track.

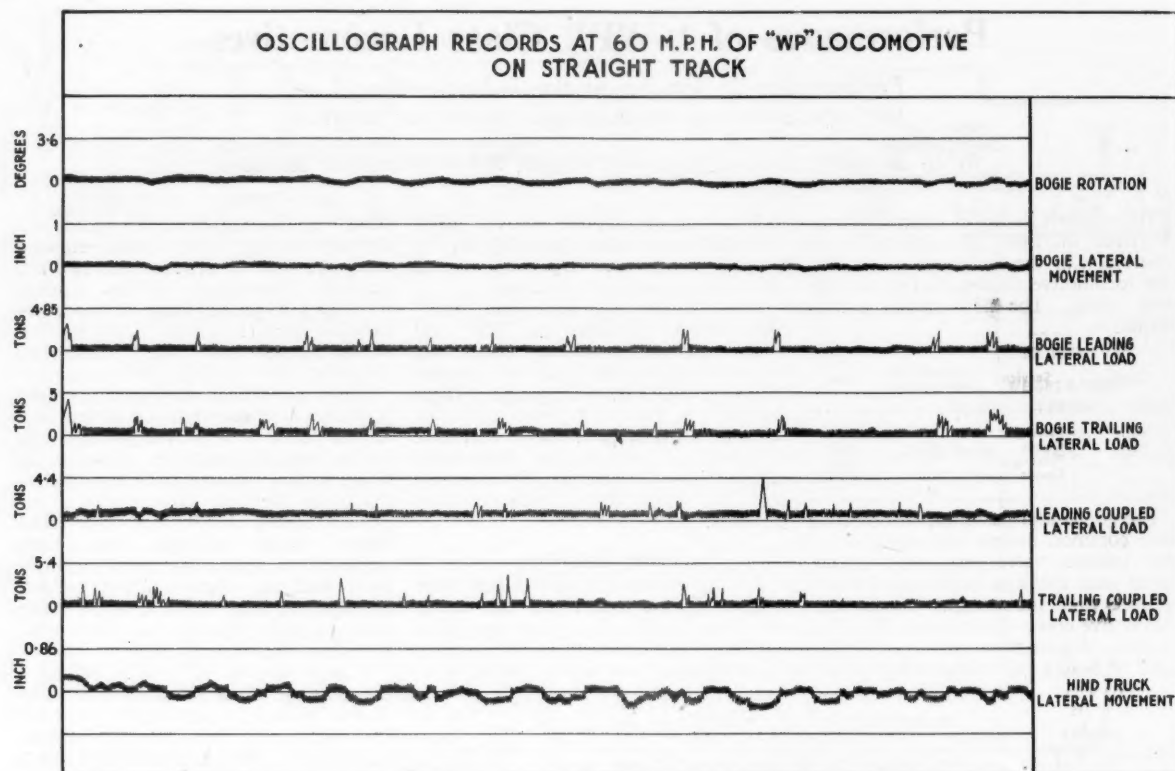
Reports so far have been definitely encouraging. Several locomotives have earned mileages over 60,000 in seven to eight months; and on one railway division 18 "WP" locomotives work a regular link of 8,850 miles per locomotive per month. The "percentage of trains not losing time" has taken a marked upward trend; but the most significant advance of the "WP" locomotives over earlier passenger locomotives in India has been their great economy in fuel, the more remarkable because in many cases they are burning relatively lower grades of coal. The following table is revealing.

Railway	Coal consumption in lb./1,000 gross ton-miles	
	Average of all passenger locomotives (Aug., 1949)	Average of "WP" locomotives
B.B. & C.I.	211.1	110.2
B.N.	207.9	140.0
E.I.	217.0	131.8
E.P.	178.1	114.0
G.I.P.	167.0	113.0
M. & S.M.	201.4	118.1 (Nov., 1949)

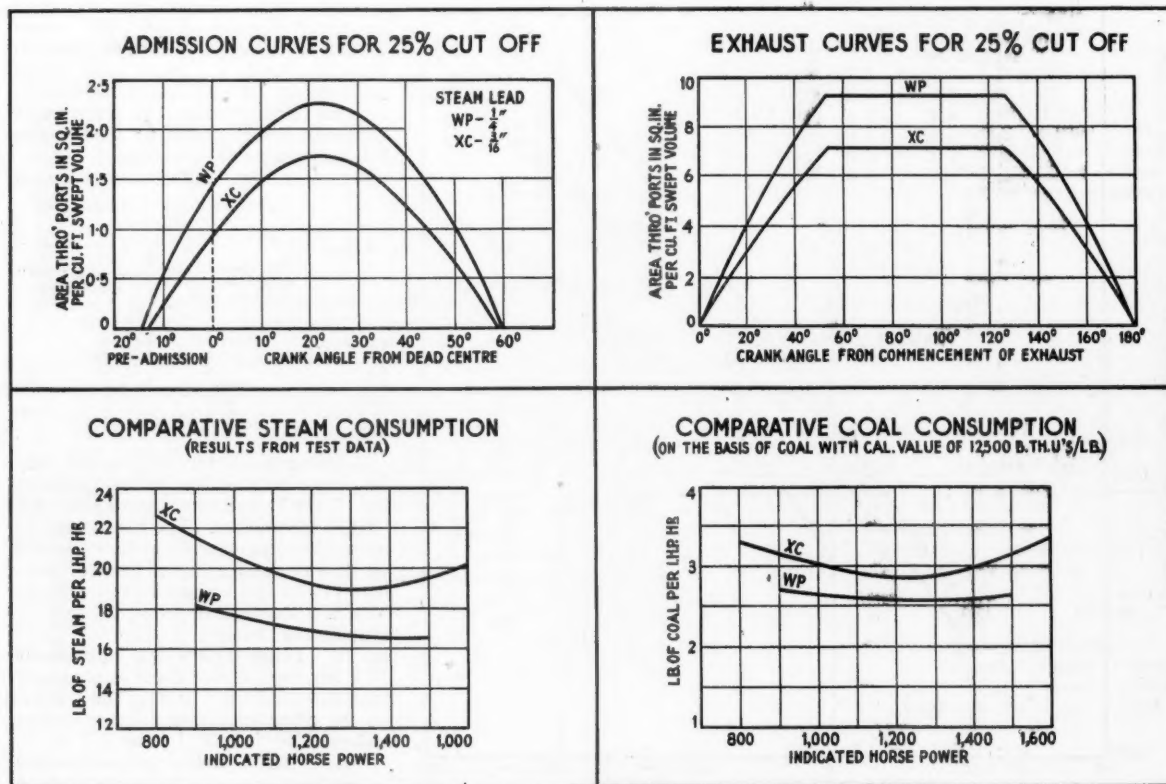
A more scientific comparison may be drawn between the performances of the "WP" and its forerunner, the "XC" locomotive. The latter, built to more liberal moving dimensions (height 14 ft. 6 in.) and a higher limit of axleload (19.7 tons) accommodates a boiler with a grate area of 51 sq. ft. and an evaporative heating surface of 2,429 sq. ft. These figures are respectively 10.9 per cent. and 8.2 per cent. larger than those of the "WP." The "WP," on the other hand, has a larger firebox volume (301.5 cu. ft. *versus* 272 cu. ft. of the "XC") and a proportionately larger free gas area. A thermic syphon has been added in the firebox and the length between tubeplates has been reduced from 18 ft. 6 in. on the "XC"



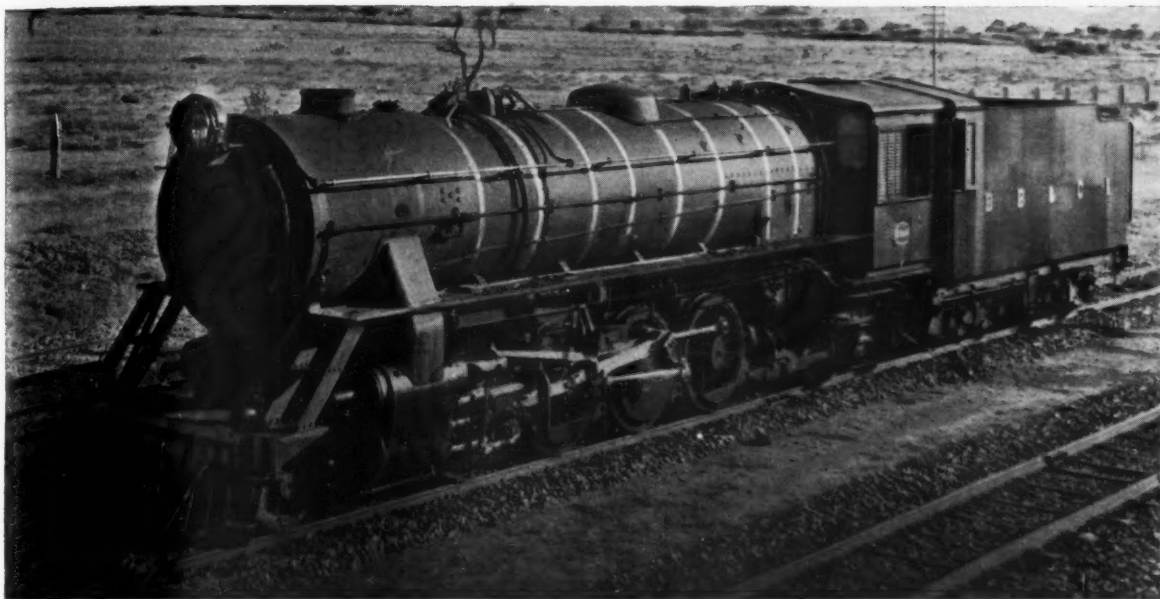
Graph of comparative boiler performance of the "WP" class and other broad-gauge locomotives, with principal boiler dimensions



Oscillograph records of "WP" class locomotives at 60 m.p.h. on straight track



Comparative performances of "WP" and "XC" class locomotives



Indian Government Railways "YG" class metre-gauge locomotive for freight operating

to 15 ft. 10½ in. on the "WP." The superheating surface of the "WP" is 8.6 per cent. larger than that of the "XC" locomotive.

Performance in Service

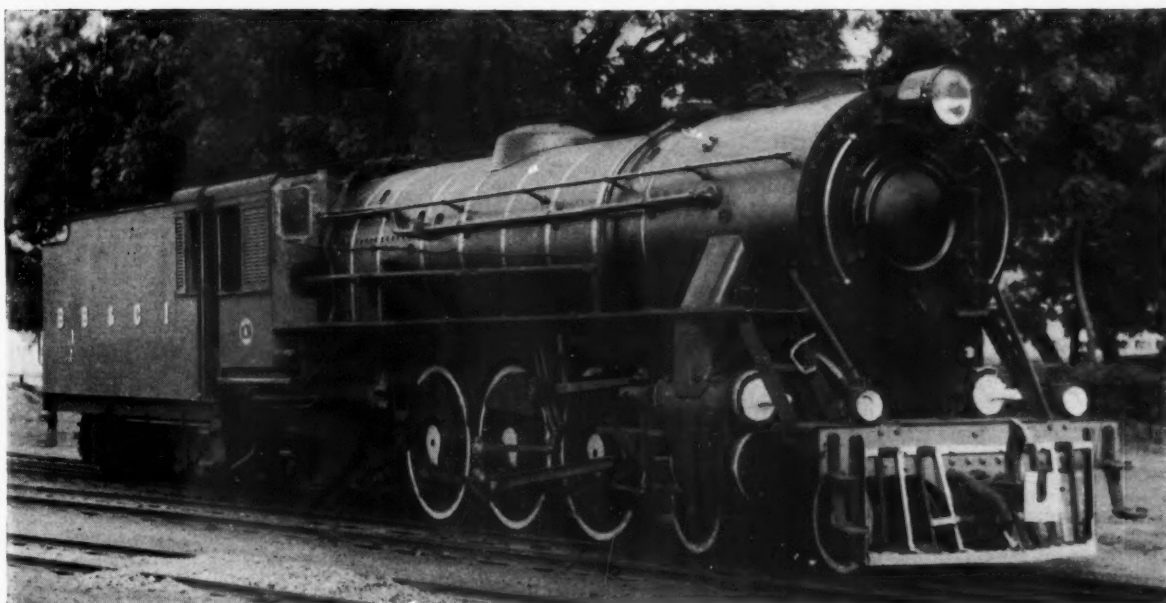
The evaporation of the "XC" boiler at a given rate of burning coal is barely 2 per cent. higher than that of the "WP," but the latter produces steam at a higher working pressure (210 lb. per sq. in. as against the "XC" 180 lb. per sq. in.) and higher temperature (695-710°F and 635-650°F for the "XC"). The gain in economy from the increased superheat completely out-

weighs the slight disadvantage in evaporation. Liberal steam passages reduce pressure drop to the steam chest and long-lap piston valves (dia. 12 in. with cylinder dia. 20½ in.; ¼ in. lead; 1.11/16 in. lap) give large openings to admission and exhaust. Combined with the higher boiler pressure and steam temperature, these advantages give the "WP" locomotive 11.3 per cent. to 15 per cent. economy over the "XC" in steam consumption, and 8.8 per cent. to 14 per cent. in fuel consumption.

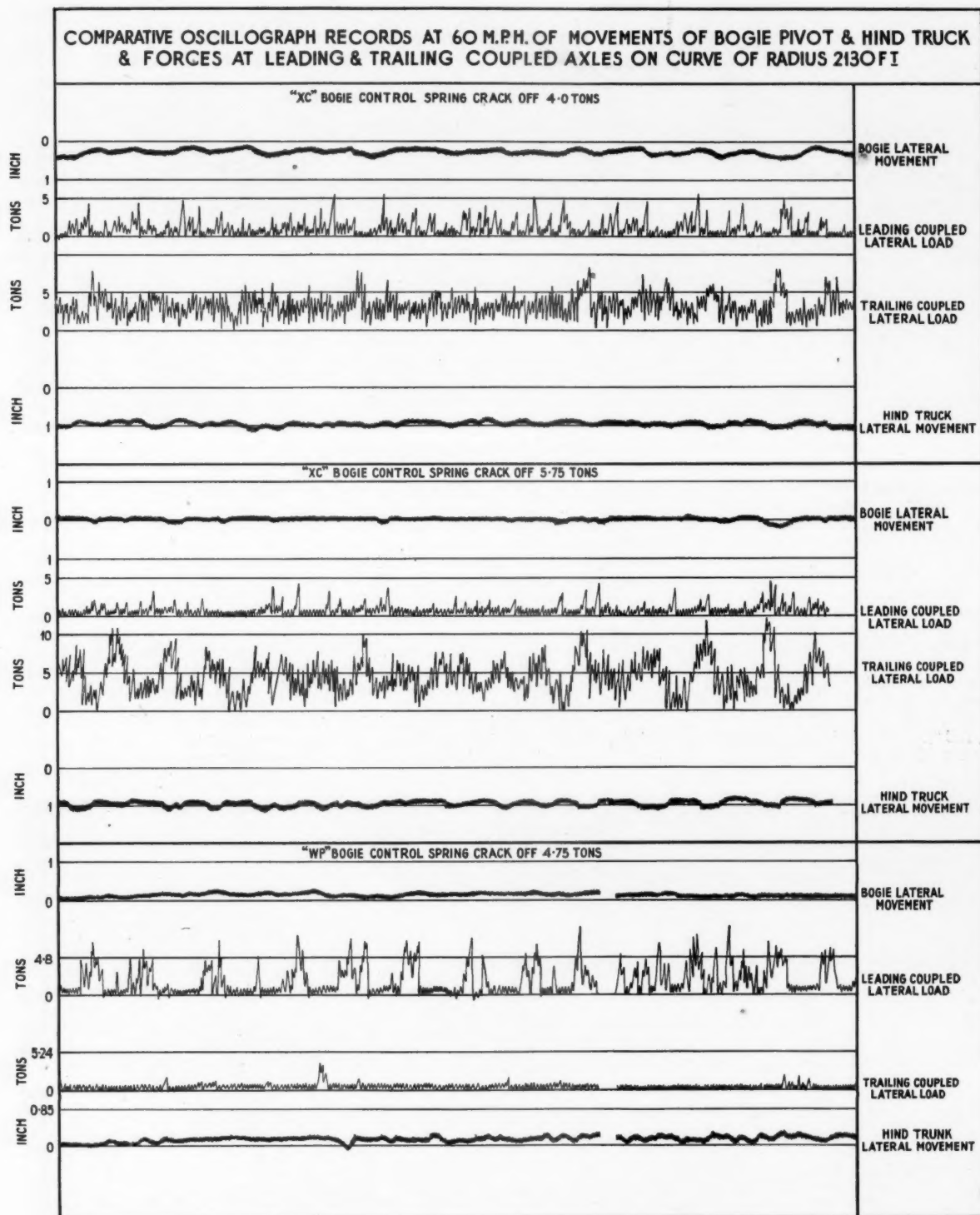
The superior riding characteristics of the "WP" have been confirmed by oscillograms of lateral loads exerted at

the leading and trailing coupled wheels. On straight track these lateral reactions on track are unusually small. On curved track, both the bogie and leading coupled wheels share the guiding reactions, but the loads at each axle are well within the prescribed limit. The oscillograms for the "WP" and "XC" locomotives taken at 60 m.p.h. approximately on a curve of 2,130 ft. radius make an interesting comparison. The pronounced periodic tail-wag of the "XC," as revealed by the sinuous record of lateral force at the trailing coupled wheel, has been eradicated in the "WP."

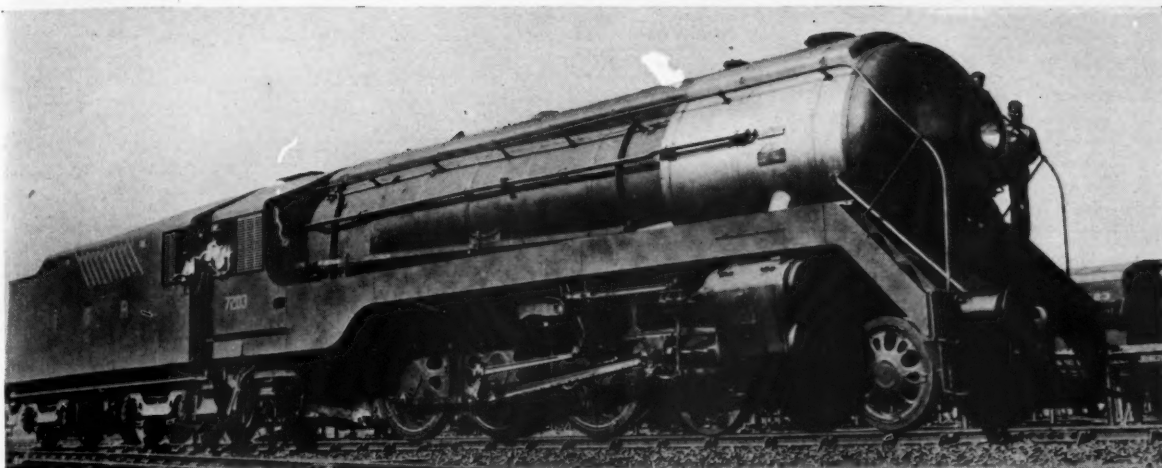
The "WP" locomotives have a lower



Metre-gauge "Y2" class locomotive for passenger train operating



Comparative oscillograph records of "XC" and "WP" class locomotives



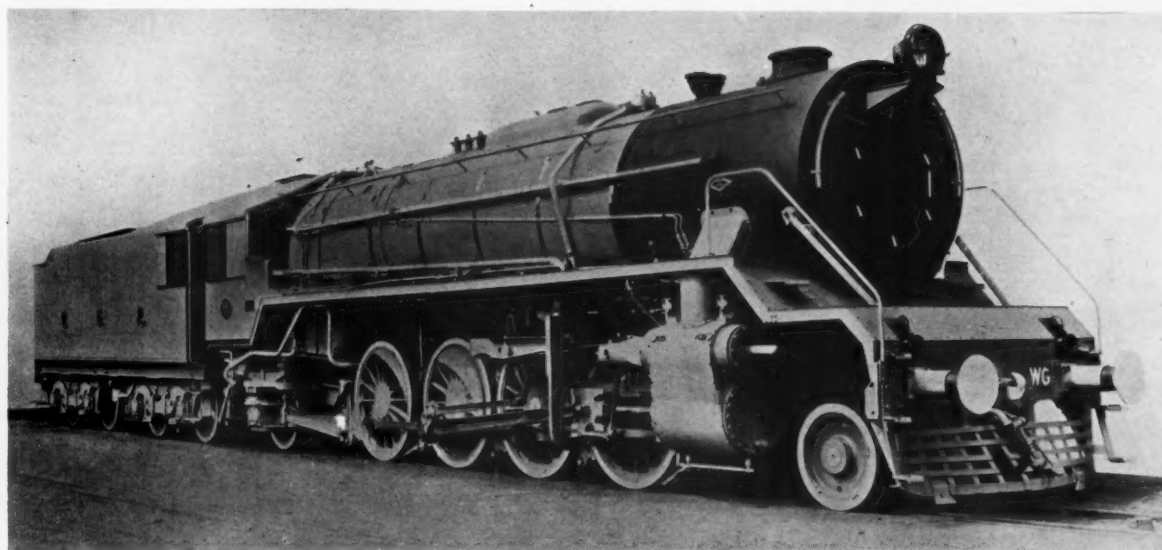
"WP" class Indian Railways broad-gauge locomotive for passenger services

percentage (39 per cent. *versus* "XC" 66½ per cent.) of their reciprocating weights balanced, so that the hammer blow on track is reduced at the expense of shuttling forces and pitching couples. The effects of the latter have been mitigated in the "WP" locomotives by

reducing the vertical distance between the drawbar level and the plane of the coupled axle centres as well as by the adoption of a special Indian design of interdrawgear.

As most of the "WP" locomotives have been in service for less than a year,

it is premature to comment on the more important operating features like reliability and low maintenance. Examination of these aspects of the "WP" locomotive performance may well be deferred for some years till a better perspective has been reached.



"WG" class Indian Railways broad-gauge locomotive for freight operating

LONDON INTERNATIONAL WELDING CONGRESS.—The first congress organised by the International Institute of Welding will open in London with a Government reception at Lancaster House on July 14. Something like 500 delegates have enrolled from among welding experts in 21 countries. Technical meetings, to be held in Oxford from July 16-20, will include sessions for the discussion of papers on the welding of bridges and structures, welding of wrought light alloys, and recent developments in British welding. There will be a plenary session on July 20 at which the 14 technical commissions will

report on their work. A technical film showing visits to the Cowley Works of Morris Motors Limited, the Pressed Steel Co. Ltd., and the Abingdon laboratories of the British Welding Research Association, together with numerous social functions and expeditions, complete the full programme. The concluding function will be a banquet at the Savoy Hotel, London, on July 21, at which the Lord Privy Seal will be principal speaker. During the following week members of the congress will visit a number of engineering works and shipyards in different parts of the country.

"ACROSS DEEP WATERS."—On June 29 the Canadian Pacific Railway exhibited in London a film entitled "Across Deep Waters" made by Famous Films (London) Limited. The film is a pictorial record of a voyage of one of the C.P.R. "Beaver" vessels from London Docks to Montreal. The ship is first seen loading a representative shipment of British goods. On the voyage the different departments in the ship are visited and their functions shown. There is a vivid impression of life at sea during an Atlantic gale. The film concludes with scenes of the passage up the St. Lawrence River to Montreal.

Increasing the Headway in St. Clair Tunnel, C.N.R.

Work undertaken to reduce maintenance and avoid re-routing all vehicles over 15 ft. high

THE St. Clair Tunnel, carrying the Canadian National Railways main line between Toronto and Chicago, under the St. Clair River which divides Ontario and Michigan, between Sarnia and Huron, is a single-line cast-iron cylindrical structure of the "tube" type.

West of the tunnel the line belongs to the Grand Trunk Western Railroad, an American subsidiary of the C.N.R. As constructed between 1889 and 1891 it had a vertical clearance of 16 ft. 4 in. above rail level. When the line was electrified in 1908-09 the headway was reduced to 15 ft. 4 in. by the overhead wiring. Since then, the heights of covered wagons have steadily increased and those over 15 ft. had to be diverted.

Eastbound trains have had to be broken up at Battle Creek, Michigan, and the higher wagons re-routed to Detroit, and there ferried over the Detroit River to Windsor, Ontario. Westbound wagons of over 15 ft. have had to be detached at London, Ontario, and re-routed to Battle Creek. Not only did this re-routing delay each wagon by at least half-a-day and cost \$15 more per wagon, but consignors deliberately chose to send their large wagons by other railways, with consequent loss of revenue to the C.N.R.

Excessive Maintenance

This bottleneck was not the only disadvantage, for track maintenance in the tunnel was unduly heavy, partly because of excessive mechanical wear in the longitudinal timbers carrying the track and in the concrete foundations on which the timbers rested; shims had to be used in many places. Maintenance was also complicated by creep resulting from the 1 in 50 gradients on which the line dips down to pass under the river; these gradients continue into the tunnel for distances of 1,900 ft. and 2,248 ft. from the two ends. The full length of the tunnel is 6,028 ft.

According to a recent article in our contemporary *Railway Engineering & Maintenance*, it was decided to replace the timber construction by reinforced concrete stringers anchored to the old concrete foundation and surmounted by continuous steel cover plates supporting malleable iron track chairs, the construction depth thus being reduced by 6 in., as no transverse sleepers are required. Stock up to 15 ft. 6 in. in height can, therefore, now pass through the tunnel.

The work had to be carried out under traffic, and the longest daily line occupation period normally available was 2½ hr. Careful planning of each day's work was therefore essential. In the autumn of 1948 a start was made on the piecemeal removal of the track, the shifting of the longitudinal timbers to make room for the new concrete stringers and their shuttering, the inspection and re-

pair of the concrete foundation, and the replacement of the track. The shuttering and reinforcement were then placed in position between trains, and the surface of the foundation concrete was washed clean and sprinkled with Ferri-text powder, a preparation for improving the bond between old and new concrete.

Concrete Trolley "Trains"

Concrete for the new stringers was mixed outside the west end of the tunnel, and during the 2½-hr. occupation periods, was carried in special hoppers mounted on two material trolleys, hauled by motor trolley to the work site, and there poured. To comply with regulations forbidding material trolleys to be propelled by motor trolleys, two of the latter were used, one at each end, so that the "concrete train" could be pulled into and also out of the tunnel. This stage took nearly 11 months.

The track was next lowered from the

timbers on to the continuous steel plates and chairs on the stringers; the plates are each 20 ft. 3 in. long, 1 ft. 3 in. wide and ½ in. thick. Before being fitted to the stringers these plates were shop-drilled for their holding-down bolts with two rows of 1⅞-in. holes spaced 9 in. apart transversely and 1 ft. 6⅞ in. longitudinally. Midway between these bolt-holes were others 1½ in. in dia. with a 3-in. stagger and counter-sunk from the bottom of the plates on the same gauge-line as the holding-down bolts. Before the plates left the shop, 1-in. bolts 5½ in. long, for securing the chairs to the plates, were inserted in the 1½-in. holes from the bottom upwards and welded into place.

To enable the plates to be fitted, short lengths of the old track were removed and 1½-in. holes 11 in. deep were drilled through the concrete stringers and into the foundation, the plates being used as templates for this boring. These holes



American portal of tunnel showing sectional shape and overhead wires

were for the $\frac{1}{2}$ -in. anchor bolts subsequently fixed by running molten lead into the holes after the rails were laid. To give the chairs some resilience, Fabco cotton-and-rubber pads were placed under them before they were bolted down with the 1-in. bolts. The chairs are, in fact, very thick bearing plates, and are shaped to give the 100-lb. rails a 1 in 20 cant. Each has four holes, two for securing it, and two, previously inserted from the bottom of the chair, hold the rail clips.

The work was carried out 160 ft. at a time, and in the first instance only half of the bolts were fitted; the other half were added when time permitted. A 36-ft. timber run-off was used to bridge the difference in rail levels at the end of each day's work. The project was planned and executed under the general direction of Mr. E. R. Logie, Chief Engineer, Central Region, C.N.R. We are indebted to *Railway Engineering & Maintenance* for the illustrations reproduced in this article.



Old timber stringers respaced, and shuttering and reinforcement for new concrete stringers in position between them



New concrete stringers complete, but sleepers still carrying rails before replacement by continuous steel plates and chairs



Continuous steel plate, holding down bolts, and clips fixed in concrete stringer

ROAD TRANSPORT PERMITS.—The validity of certain wartime emergency permits relating to public service vehicles, road passenger services, and drivers and conductors of public service vehicles, which would otherwise expire on July 31, will be further extended under the Road Vehicles Drivers (Amendment) Order, 1951, made by the Minister of Transport. The Order was published on June 29 and will come into force on August 1. Extensions are automatic and are intended to keep the authorisations effective until they can be reviewed and replaced where necessary by

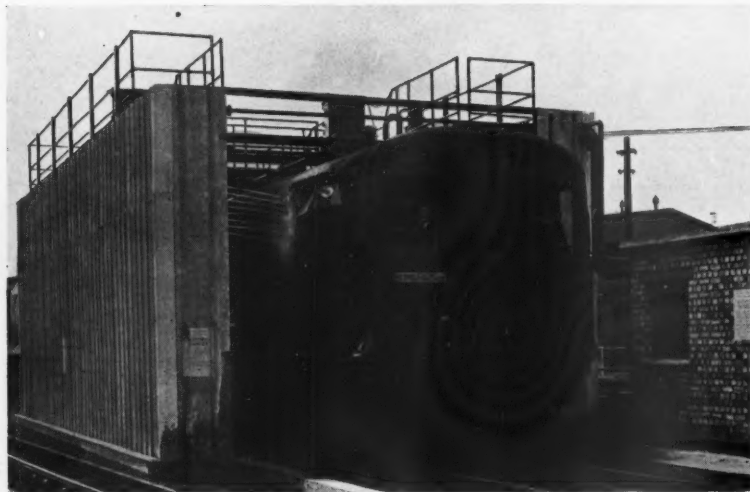
new licences. The Order also provides that the authority whereby authorised drivers of public service vehicles may at the same time act as conductors, not being duly licensed as such, will continue until July 31 next year, or until the expiry of the relevant Defence Regulation.

CLOSING OF STATIONS: LONDON MIDLAND REGION.—Wappenham Station and Helmdon Station, between Blisworth and Banbury on the London Midland Region, were closed for passengers, parcels, and passenger train merchandise as from July 2.

SPECIAL TRAINS FOR SCOTTISH HOLIDAYS.—Direct special trains to Scottish and English holiday resorts were run by the Scottish Region on June 29 and 30 in connection with the Dumbarton and Clydebank holidays. On Friday night there was a special for Blackpool starting from Balloch at 10.50 p.m. and six specials left the district on Saturday morning. More than 20 relief services were run from Glasgow main-line stations during the weekend. On Friday and Saturday there were additional trains for Inverness and London and other towns.

Train-Washing Plant at London Transport Depot

Equipment for cleaning surface line stock embodying developments in design



MECHANICAL train-washing equipment has been in regular use on London Transport railways for over 20 years and the principle is to pass the entire train slowly between rotating vertical fabric wipers while waterspray floods the surface to be cleaned. Such equipment has so far been installed either inside a running shed or in a separate building.

Plant has now been installed at the Hammersmith depot, however, which, although following the general principles of the equipment in use elsewhere, incorporates developments in design, including an open form of construction to obviate enclosure in a building, improvement to the suspension of the washing spindles, provision of horizontal washing spindles for cleaning the flared lower panels of surface-line rolling stock, elimination of foot valves, improved methods for maintaining circulating water in clean condition, close control of water levels, and elimination of hand removal of sludge from the settling tanks.

Eight vertical and four horizontal cleaning spindles are provided. Each is driven by an independent weather-proof motor combined with an enclosed reduction gear; the whole is mounted co-axially above the vertical spindle or at the end of the horizontal spindle.

For control the plant is divided at the mid-point of its length; the motors driving the group of spindles (four vertical and two horizontal) which comprise each half of the machine are controlled by a separate weatherproof starter mounted above the machine. Therefore either half of the machine can be independently operated. Each group of four vertical motors, and each pair of horizontal motors, is controlled by separate push-buttons, and to reduce the current demand at starting there are

time relays which cause the motors in each group to start successively.

Each vertical spindle is supported at the top by a dual-purpose ball-bearing, and radial ball-bearings are provided at the foot to take lateral forces only; the housing is arranged to exclude water and dirt. Top bearings are mounted in spherical seatings for flexibility and easy removal and replacement of spindles.

The side screens are of asbestos-cement sheeting, with corrugations pitched at

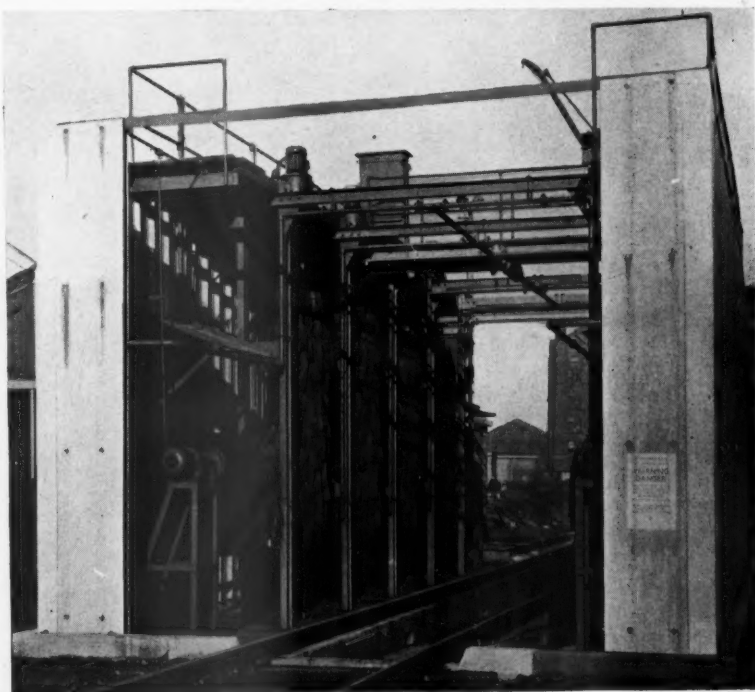
13-in. centres, and the sheeting is fixed to the steel framework by bolts passing through the corrugations, whose convex side is towards the interior of the plant. Water seeping through the bolt holes thus tends to be restrained within the concavity of the corrugations. Water thrown on the side screens drains directly to a concrete base designed to assist its return for re-circulation.

Vertical Spindle Pumps

The pumps are motor driven and are of the vertical spindle type with "drowned" suction. Two sets are provided to enable maintenance to be carried out without interfering with the operation of the plant. The pumps are mounted in a dry-well adjoining the settling tank in such positions that the pump casings are full when the water is at the normal standing level; therefore priming is unnecessary. The motors are mounted above floor level in a control room. Valves are operated by handwheels in the control room and the dry-well may be drained.

Although most of the washing water is re-circulated a final rinse is provided by clean water sprays as the train emerges from the machine. Water falling within the area of the plant is returned to the settling tank from which any excess is allowed to overflow to the drainage system. Water from the collecting channels is returned into the

(Continued on page 21)



Close-up of plant showing cleaning spindles

RAILWAY NEWS SECTION

PERSONAL

Dr. John Favre, Divisional Manager, Lausanne, Swiss Federal Railways, has been appointed Director General, and has been succeeded by Mr. André Marguerat, Director of the Montreux-Oberland Bernois Railway.

Mr. J. Ratter, C.B.E., B.Sc., M.I.C.E., Civil Engineer (Maintenance), London

became Permanent Way Assistant to the Engineer, Kings Cross. Mr. Ratter in 1947 joined the L.P.T.B. as Civil Engineer (Maintenance), with responsibility for maintenance of all railway and tram permanent way, and all rail and road service properties of the Board.

Mr. D. S. Purdom has resigned as Chief Mechanical Engineer, General Roca Railway, Argentina, to become Technical

Mr. J. McCreadie, M.B.E., Assistant Operating Superintendent, Scottish Region, who, as recorded in our May 18 issue, has been appointed Operating Superintendent, Scottish Region, joined the Caledonian Railway at Glasgow in 1907 and spent his early career in the Commercial and Operating Departments. He became head office inspector on freight services in 1920 and shortly after the grouping was appointed Assistant Divisional Controller



Mr. J. Ratter

Appointed Chief Officer, Engineering (Works),
Railway Executive Headquarters



Mr. J. McCreadie

Appointed Operating Superintendent,
Scottish Region

Transport Executive, who has been appointed Chief Officer, Engineering (Works), Railway Executive Headquarters, was educated at St. Peter's School, York, and at Durham University. He began his railway career in 1929, as a pupil of the late Mr. John Miller, then Engineer, North Eastern Area, L.N.E.R., and after holding several appointments with that company joined the L.P.T.B. in 1936, as an assistant in the Permanent Way Department. In 1938 he returned to the L.N.E.R. as Assistant District Engineer, Sheffield. Mr. Ratter served throughout the war with the Royal Engineers in France, Africa and Italy, also in the War Office. He became Deputy Director of Transportation, C.M.F., with the rank of Colonel, and with the responsibility for railway reconstruction in the Italian campaign. He was mentioned in despatches in 1942, awarded the O.B.E. and Legion of Merit (U.S.A.) in 1944 and C.B.E. in 1945. On demobilisation he rejoined the L.N.E.R. and was appointed District Engineer, Guide Bridge; in 1946 he

became Director of Sul Americana Técnica Industrial e Comercial S.A., and has been succeeded by Mr. B. P. Aymar. Mr. M. A. Baumann has been appointed Chief of Way & Works, General Roca Railway, in place of Mr. J. Paton, who has been seconded to the management.

The British Transport Commission has announced the appointment of Mr. Albert J. Lewis, at present Assistant to the Principal Staff Officer of the Commission, as Works Officer in the Chief Secretary's Department, to succeed Mr. R. B. Lewis who resigned from the Commission's service at the end of April.

SOUTHERN REGION APPOINTMENTS

The following appointments in the Civil Engineer's Department of the Southern Region have recently been announced:—

Mr. A. H. Cantrell, District Engineer, Purley, to be Assistant Civil Engineer.

Mr. R. E. Coward, Assistant, General, to be Assistant Engineer (Electrification).

(Freight Services), Northern Division, L.M.S.R., Glasgow, and, in 1935, Divisional Controller (Passenger & Freight Train Services). He became Assistant Operating Manager (Traffic), Glasgow, in 1938, and during the second World war was actively concerned with the intensive naval, military and air force rail movements in Scotland. On nationalisation Mr. McCreadie became Assistant Operating Superintendent, Scottish Region, British Railways.

Mr. G. C. Dew, Foreign Freight Traffic Manager for the Canadian Pacific Railway, has retired and has been succeeded by Mr. K. M. Fetterley, formerly Assistant Freight Traffic Manager for the company's Pacific Region.

We regret to record the death on June 21, at the age of 75, of Mr. A. E. Pearse, who was Chief Mechanical Engineer of the East Indian Railway from 1926 to 1930.



Mr. J. A. Broughall

Appointed Executive Officer (Electrical Engineering New Works & Development), Railway Executive

Mr. J. A. Broughall, B.Sc. (Eng.), M.I.E.E., Principal Assistant to the Executive Officer (Electrical Engineering New Works & Development), Railway Executive, who, as recorded in our June 29 issue, has been appointed Executive Officer (Electrical Engineering New Works & Development), London, after pupilage at the Dick Kerr Works of the English Electric Co. Ltd., he entered their Central Design Department. He joined the L.M.S.R. in 1931 and in 1935 was appointed Assistant (Generation & Distribution). He was responsible to successive Chief Mechanical & Electrical Engineers at Euston and Derby for power supply and distribution, including reconstruction of Stonebridge Park Power Station for high pressure and for 50-cycle generation, the conversion of substations supplying the Euston-Watford and Liverpool-Southport electrified lines to 50 cycles and for remote control. Since 1948 he has been chairman of policy committees for standardisation and specification of electrical equipment. In 1950 he was appointed Principal Assistant in the newly formed Electrical Engineering New Works & Development Section of the Railway Executive.

We regret to record the death at the age of 67 of Mr. R. F. McKay, Manager of the Inventions & Patents Department of the Dunlop Rubber Co. Ltd., until his resignation last year.

Mr. G. F. Taylor has relinquished the post of Joint Managing Director of the Forestal Land, Timber, & Railways Company, but will continue as a Director of the company.

Mr. R. O. Stewart, Engineer of Bridges, Canadian National Railways, who, as recorded in our May 25 issue, has been appointed Assistant Chief Engineer, Construction, was born at Lindsay, Ontario, and began his railway service as Assistant Bridge Engineer at Moncton, in 1913. In 1921, he was appointed Assistant Engineer of Bridge Standards at Toronto and two years later went to Montreal in the same capacity. He became Engineer of Bridge



Mr. D. Frew

Appointed Assistant Accountant, Scottish Region

standards in 1931 and Assistant Structural Engineer in 1932. In the same year he was appointed Assistant Engineer of Bridges and took up his position as Engineer of Bridges in 1942.

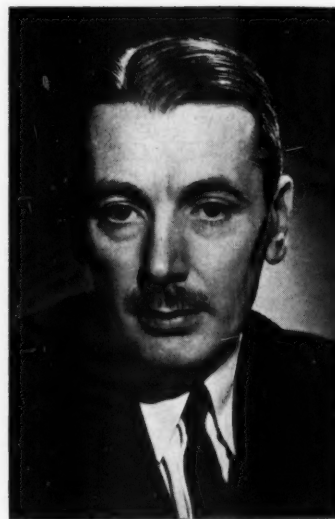
Mr. D. Frew, Assistant to Accountant, London Midland Region, who, as recorded in our June 22 issue, has been appointed Assistant Accountant, Scottish Region, joined the Glasgow & South Western Railway in 1911 and spent his early career in the Audit Department. He served for four years in the Navy during the first World war and, after demobilisation, returned to the Audit Office, remaining there until September, 1923, when he was appointed to the Accountant's Office, L.M.S.R., Glasgow. In 1929, Mr. Frew went to the Estate Accountant's Office, and three years later became Estate Accountant (Scotland), L.M.S.R., Glasgow. At the end of 1940 he was appointed Estate Accountant, L.M.S.R., London (Euston), and in 1944 took up special duties in the Chief Accountant's Department; he was later appointed Hotels Accountant, L.M.S.R., London. Mr. Frew was on loan to the Hotels Executive until December, 1949, when he was appointed Assistant to Accountant, London Midland Region. He is a Member of the Association of Certified & Corporate Accountants.

Mr. R. C. Hoult has been appointed a Director of the Anti-Attrition Metal Co. Ltd.

Mr. H. O. Field has resigned from the board of Henry Meadows Limited.

Mr. John Cliff, Deputy Chairman, London Transport Executive, has been elected a Member of the Management Committee of the International Union of Public Transport.

Mr. Leslie A. Luke, who has relinquished his position as Public Relations Officer of Coras Iompair Eireann, to be London Local Editor of the Irish News Agency, was the recipient of presentations from the staff of the Public Relations Department on May 31 and by Mr. J. B. Martin at a dinner held in Dublin on June 9.



Mr. E. C. Ottaway

Appointed Chief Supplies Officer, London Transport Executive

Mr. E. C. Ottaway, M.I.Mech.E., R.D.I., Works Manager (Buses & Coaches), London Transport Executive, who has been appointed Chief Supplies Officer, is 46 years old, was apprenticed with Clement Talbot Limited and afterwards was engaged on experimental work with the Sunbeam Motor Car Company. He subsequently joined the Midland Red Omnibus Company, to which he was later appointed Rolling Stock Engineer. In 1929 he joined the London General Omnibus Company as Assistant Experimental Engineer and later spent two years with the Associated Equipment Co. Ltd., where he was engaged on development work. Mr. Ottaway rejoined the London General Omnibus Company in 1933 as Technical Officer (Buses & Coaches), and retained that title on the formation of the London Passenger Transport Board. In 1940 he was appointed Acting Works Engineer, but relinquished this post later in the same year, when he was seconded for work in connection with the manufacture of "Halifax" bombers by the London Aircraft Production Group, becoming Joint General Manager in 1943. This position he held until 1945, when he became Works Manager (Buses & Coaches), L.P.T.B. In 1949 Mr. Ottaway was appointed to the distinction of Royal Designer for Industry by the Council of the Royal Society of Arts.

Mr. H. R. Caulfield-Giles, M.Inst.T., A.C.I.S., who is retiring from his position as Transport & Traffic Manager to Newton Chambers & Co. Ltd., at the end of July, began his business career in the Office of the District Goods Manager, Cardiff, G.W.R. After serving in various departments he subsequently became personal clerk to the late Mr. E. Ford, then District Goods Manager, Cardiff. Mr. Caulfield-Giles afterwards served a period with the Rhymney Iron Company (later merged with Powell Duffryn Co. Ltd.) in charge of that company's wagons. During the first World war he served as a Transport Officer with the South Wales Borderers and later with the Indian Army and following a short period in shipping after his demobilisation, joined Newton Chambers & Co. Ltd. Among other positions he holds are those of Chairman of the Traders' Traffic

Conference, the Council of Ironfoundry Associations Transport Committee, the Traders' Road Transport Association (Yorkshire-Sheffield Area), and the Sheffield Chamber of Commerce Transport Committee. He was first Chairman of the Sheffield Centre of the Institute of Transport and the first Chairman of the Association of British Chambers of Commerce Transport Committee. He is also a member of the Traders' Co-ordinating Committee and of its standing sub-committee, the International Chamber of Commerce Transport Users' Committee, the National Union of Manufacturers Transport Committee, the Association of British Chemical Manufacturers Traffic Committee, and the Transport Users' Consultative Committee of the Federation of British Industries. By the unanimous wish of the members he is retaining the Chairmanship of the Traders' Traffic Conference and membership of a number of other transport bodies.

At the annual general meeting of the Royal Statistical Society on June 27, Professor A. Bradford Hill, President, presented to Mr. F. A. A. Menzler, Chief Development & Research Officer of the London Transport Executive, the Society's Guy Medal in silver for his paper entitled "London and its Passenger Transport System." In the course of a reference to Mr. Menzler's interest in the development and use of statistics, the Society's annual report stated that the Council was glad to acknowledge in this way Mr. Menzler's contributions to the cause of statistics.

NATIONAL COAL BOARD

The Minister of Fuel & Power has announced that on July 31 Lord Hyndley will retire from the Chairmanship of the National Coal Board and his successor as Chairman of a reconstituted Board will be Sir Hubert Houldsworth, K.C., Chairman of the East Midlands Division of the Coal Board. Mr. W. J. Drummond, Chairman of the North West Division, and Sir Eric Coates, Finance Member of the Overseas Food Corporation, have been appointed Deputy Chairmen of the National Coal Board, and Sir Andrew Bryan, Chief Inspector of Mines, becomes a full-time Member. The Members of the reconstituted Board will not have any specialised or departmental responsibilities, and this will complete the move towards the establishment of an entirely non-functional Board.

Mr. A. S. Bramworth, A.M.I.Mech.E., Assistant Works Manager (New Works), York, North Eastern Region, who, as recorded in our June 15 issue, has been appointed Assistant Carriage & Wagon Works Manager, York, began his railway career in the drawing office at Doncaster on the former Great Northern Railway in 1921. After gaining experience in the Carriage Works at Doncaster he was appointed Assistant to Works Manager there and continued in that position until 1941, when he was transferred to York Carriage & Wagon Works in a similar capacity. He was appointed Assistant Works Manager (New Works), York, in 1945, with special responsibility for new coach construction and was particularly concerned with the organisation of the new coach building shop and the production of the standard steel coach. In 1945 Mr. Bramworth accompanied the late Mr. A. H. Pepper-corn, then Assistant Chief Mechanical Engineer, L.N.E.R., on a tour of America. Mr. Bramworth is Chairman of Mechanical Engineering Policy Committee No. 3, dealing with sawmills and wood machinery.

Rail-Air Co-operation in Ireland

At the end of its financial year British European Airways disclosed that the Great Northern Railway (Ireland), one of its largest agencies in Ireland, had shown an increase in its air passenger bookings of over £1,000. To mark the appreciation and enthusiasm shown by the railway officials engaged on the work, the B.E.A. has invited the stationmasters at the three stations which secured the highest results, (Enniskillen, Dungannon, and Omagh) to be its guests for a day; this will include a flight to Prestwick in one of its latest aircraft.

The G.N.R.(I.) station in Belfast is the only joint rail and air terminus in Ireland; the B.E.A. passenger and freight depot is on the station premises near the Glengall Street exit. From here B.E.A. buses operate to and from Nutts Corner, the fourth busiest airport in the United Kingdom.

The close co-operation between the two transport concerns makes it possible to book from any of the 150 G.N.R.(I.) stations to all British, Commonwealth and Continental airports served by the B.E.A. Recently a passenger was booked through to Montreal.

The G.N.R.(I.) has had links for nearly 100 years with all the cross-channel shipping firms and railways. Some of the benefits include the "door-to-door" carriage of goods by rail and sea between firms and customers in all parts of the British Isles, inclusive rates exist between stations on the G.N.R.(I.) and every city and town and nearly every village across the channel. There are the through rail and sea fares, which enable passengers to purchase also a ticket at starting point which will allow travel to destination without re-booking.

Progress in Railway Catering

Mrs. Ella Gasking, Member of the Hotels Executive of the British Transport Commission, has recently described developments in railway catering. Railway refreshment rooms now sell 225,000 cups of tea and coffee, 80,000 cakes and pastries, and 4,000 packed meals daily.

The Executive has now installed at Waterloo Station buffet a self-service machine, the first of its type in the country, and developed and manufactured in Australia. From this machine the customer has a choice of 25 articles by simply inserting coins. The goods are displayed in a miniature shop window and clearly priced. Items on sale vary from day to day and range from a box of matches to a packed luncheon. When extended, this automatic service will be of particular benefit if, for example, the refreshment rooms are closed or at stations where there is no refreshment room.

Since the war, Mrs. Gasking stated, many station refreshment rooms have been reconstructed and re-equipped, and the choice of food available has been greatly improved. New "help-yourself" service buffets have been completed at Newcastle, Liverpool Street (east side), and Charing Cross. After the summer, work will begin on similar buffets at Euston, Paddington, Victoria, and Waterloo.

Power-driven mobile buffets have been introduced at some places with no refreshment room, for example, at small stations serving race meetings or agricultural shows. Modernisation of the railway refreshment

rooms has continued within the limits imposed on capital expenditure, and has been completed at Colchester; Ipswich; Lowestoft; York; Leeds; Wolverhampton; Edinburgh Waverley; Glasgow Queen Street; and Oban.

The dining room at Perth General Station has been redecorated and that at Leicester London Road, modernised and refurnished.

PROGRESS OF TOURISM IN BRITAIN.—Figures given at the annual general meeting of the British Travel & Holidays Association on July 3 show a decline of 10 per cent. in the number of American visitors, although it is expected that there will be an improvement later in the year. The number of visitors from Western Europe is already almost a third higher than last year. By the end of the year it is hoped that there will be a record number of 700,000 foreign tourists. Sir Alexander Maxwell, Chairman, referred to the shortage of first-class hotel accommodation in London and elsewhere and said that within a few months the Association would be putting before the Government suggestions for amendments to the licensing laws which they believed would meet the main criticisms from travellers and from tourists to Britain.

Train-Washing Plant at London Transport Depot

(Concluded from page 18)

settling tank at one end, and passes through two perforated diffusing screens which provide as even a flow of water as possible through the tank.

The bottom of the settling tank is sloped to assist the forward movement of deposited particles of sludge which pass ultimately under a barrier into a hemi-cylindrical sump. An independent suction pipe, with intake near the bottom of the hemi-cylindrical sump, and with valves arranged for connection to either pump at will, is provided for scavenging. Nozzles, mounted on a header arranged for connection when required to the pump delivery, are arranged to direct jets of water tangentially into the sump, producing a combined scouring and agitating effect.

When clearance of accumulated sludge is required, one pump is run, and the valve controlling the agitating nozzles is opened, the "normal" suction entry being used. Soon the sludge is thoroughly mixed with the water in the scavenging chamber; the valves, connecting the pump discharge to drain, and the "scavenge" suction, are opened, and the "normal" suction valve closed. The feed to the "agitating" nozzles can then be gradually reduced until the tank is nearly empty.

At this stage the refilling valve, which supplies clean water through a perforated pipe, is opened to rinse the walls and floor of the tank, and is then reclosed. A standpipe is provided to allow additional rinsing by hosepipe.

The plant described above was constructed by the staff of the London Transport Executive to designs prepared under the direction of Mr. W. S. Graff-Baker, Chief Mechanical Engineer (Railways).

Ministry of Transport Accident Report

Edgware Road, London Transport Executive: July 1, 1950

Colonel D. McMullen, Inspecting Officer of Railways, Ministry of Transport, inquired into the accident which occurred to an electric passenger train at 9.46 a.m. on July 1, 1950, at Edgware Road, on the Metropolitan Circle line. Train No. 53, Putney to Edgware Road, consisting of five coaches running at 30 m.p.h., was tripped by the replacement of the home signal to red, and the outermost facing points were reversed under the leading car, the front bogie of which took the crossover to the up loop line while the trailing bogie and remaining cars travelled along the up main. The train stopped in 251 ft. with the leading car astride both tracks and fouling the down loop, with the rear bogie derailed. Of the 30 passengers in the train only one was slightly injured. There was little dislocation of traffic.

At the time there was a permanent 10 m.p.h. speed restriction over Praed Street junction and there is an instruction that all trains must stop at Edgware Road. Normal working over the up main was resumed at 8.0 p.m. the same evening and over the up loop the next morning, after a complete test of signalling equipment, which was found to be in perfect order.

The layout is worked from a 36 miniature-lever frame, with indications above the levers showing the signal aspects and positions of the points at any moment; there is also a "normally dark" type illuminated diagram. Lever 23, operating the outermost facing points, is locked mechanically, normal or reversed, by reversing lever 33 and also electrically by the occupation of track circuit MM, which commences 5 ft. 9 in. in rear of the switches. Levers 33 and 36A have to be operated for each train movement, but signals 34 and 35 work automatically when their levers are reversed. The diagram on page 23 shows the lines, signals, and so on, essential to an understanding of the case. Signals are of the London Transport standard 2-aspect type with train-stops and repeaters where necessary. A repeater signal under a stop signal shows no light when the latter is at red. The train which was derailed was preceded by Circle line train No. 167, in turn preceded by a train to Whitechapel, No. 90.

Evidence

The motorman of train No. 53 stated that on leaving Praed Street he saw signal R.36 B yellow and 36 B red; the latter turned to green just before he reached it, and he traversed the junctions with the controller in full series and then saw signals 35, 34, 33 at green, with route indicator at 33 showing "2", for the loop, which was correct for him. At about a half car length distance 33 changed to red, and before he had time to make a further brake application he passed it at about 20 m.p.h. and his trip valve was opened. Accompanying Colonel McMullen on some tests he agreed that he might have under-estimated his distance from the signal when it changed, and that that might have occurred just before the train occupied track circuit LL.

A station inspector who had been at Edgware Road for seven months was relieving the signalman while he had his breakfast. The evidence he gave to Colonel McMullen was not of great assistance and differed substantially from that given at the London Transport Executive inquiry. He is 35 years old and had been

a station inspector for two years with a clear record. On one occasion he was commended for prompt action.

He said that he dealt with the train to Whitechapel which was followed by the Circle train No. 167 to the same platform. He cancelled the description of the latter when it was on track circuit FF and immediately after that train No. 53 was described. When No. 167 had passed track FF he put lever 36 normal and reversed it again so that the signal would clear for that train as soon as track conditions permitted, but he did not set up the route to No. 2 platform, being engaged with westbound trains. He watched the diagram to see No. 53 clear the junction when he cancelled its description and put 36 lever normal. Shortly after he heard the noise of a train being tripped, but did not know which it was. He then saw that 23 was normal and 33 reversed.

He stated categorically at the L.T.E. inquiry that he had not touched lever 33, nor point lever 23, after the arrival of the Circle train 167, but told Colonel McMullen that, although he could not remember having moved them, he might have done so subconsciously, as he had to reverse 22 for shunting a westbound train into a siding and might have pulled 23 by mistake. On reflection he concluded that a westbound Hammersmith train had traversed the junction before eastbound Circle train 167, not after, as he stated at the earlier inquiry.

The signalman who was having his breakfast was relieving a regular man and said that the inspector came into the box at 9.35 a.m. and was told the position of the traffic. There was no other conversation. The last movement he himself made was to start a westbound Circle train; he saw eastbound train 167 arrive in platform No. 1 and was certain that the inspector put back levers 36 and 33 after it. He noticed that as the train was passing the box a terminating one, No. 53, was described. He saw the inspector operate 36 lever for it, but could not say whether he operated 23 and 33 as the inspector standing at the frame obscured his view, but he had seen him to be making some movements and heard them also. He then heard the noise of a train being tripped, when the inspector remarked that he had tripped one and on going to the frame he saw 23 and 36 normal and 33 reversed. He put safety collars on them. The indicator for signal 33 showed red, but he did not notice until a little later that 23 points were indicated as being normal. He observed that the description of train 53 had been cancelled and another Circle train described.

A signal lineman happened to be going into the box with the inspector, and, after asking about an alleged lamp failure in a repeater signal and some usual conversation about the position of trains, noticed nothing until he heard a hissing noise and the inspector exclaimed: "I have tripped him." Running down to see what had occurred he met the motorman, who said that signal 33 "went back in his face." Returning he found the levers to be in the positions given by the signalman. Asking the inspector what had happened, that man replied that all he had done was to "restroke" lever 36. During the previous week, when working at Edgware Road, he had had no occasion to give any back-lock release and had not done so that morning.

Other evidence was given to the effect that there were no defects in the switches, and a mark suggested that they had tried to move under load; the first mark of actual derailment was found near signal 31. The brakes on train 53 were in proper order.

Inspecting Officer's Conclusions

Colonel McMullen is satisfied that signals 33, 34, 35 were green when sighted by the motorman and that 33 was changed to red as he approached it. Even at normal speed it would have been impossible to stop short of points 23 and no responsibility rests on him; but having regard to the distance travelled after the train was tripped he must have approached 33 at about 30 m.p.h. and to do so must have traversed Praed Street junction at well over the authorised speed of 10 m.p.h. This aspect of the case was discussed with the officers of the Executive, who explained to Colonel McMullen the method used to check speed over restrictions and they assured him that it was fully used. The return of signal 33 to red and the reversal of points 23 under the train must have been due to some action by the inspector, and it can only be assumed that after Circle train 167 arrived he set up the route for train 53 to run to its proper platform, No. 2. The signalman saw lever 33 put normal behind train 167 and the inspector must have again reversed it, for the motorman saw the route indicator showing for platform 2. By cancelling the description of train 53 as it passed the junction the inspector deprived himself prematurely of this reminder of its approach and then observed another Circle train to have been described.

Colonel McMullen has little doubt that he thought train 53 had arrived in platform 2, which he could have verified from the track diagram, and consequently restored 33 to normal. He then put back 23, intending to direct the following Circle train to platform 1, at the very moment when train 53 reached the points and before it occupied track MM. His next movement in the natural course would be to reverse 33 again to clear that signal and he evidently did so.

The points being electrically worked—they had no ground track lock as provided in some London Transport installations—did not respond as quickly as electro-pneumatic points would have done and the switch tongues did not begin to move until the first bogie was on them. That bogie began to travel to platform 2 and then the points changed over. The speed of the train and movement of the switches are consistent with this hypothesis, but it is tenable only if lever 33 was put normal before track LL was occupied; the motorman agreed that this might have been the case. The inspector must be held entirely responsible for the accident. His cancellation of train descriptions was premature and contributed in no small way to his subsequent actions.

Remarks

The bad lapse on the part of the inspector was possible only because of the short length of the track circuit approach control, which was remedied with commendable promptness on the evening after, by extending it to the two preceding track circuits. A few other places have been found where similar action seems desir-

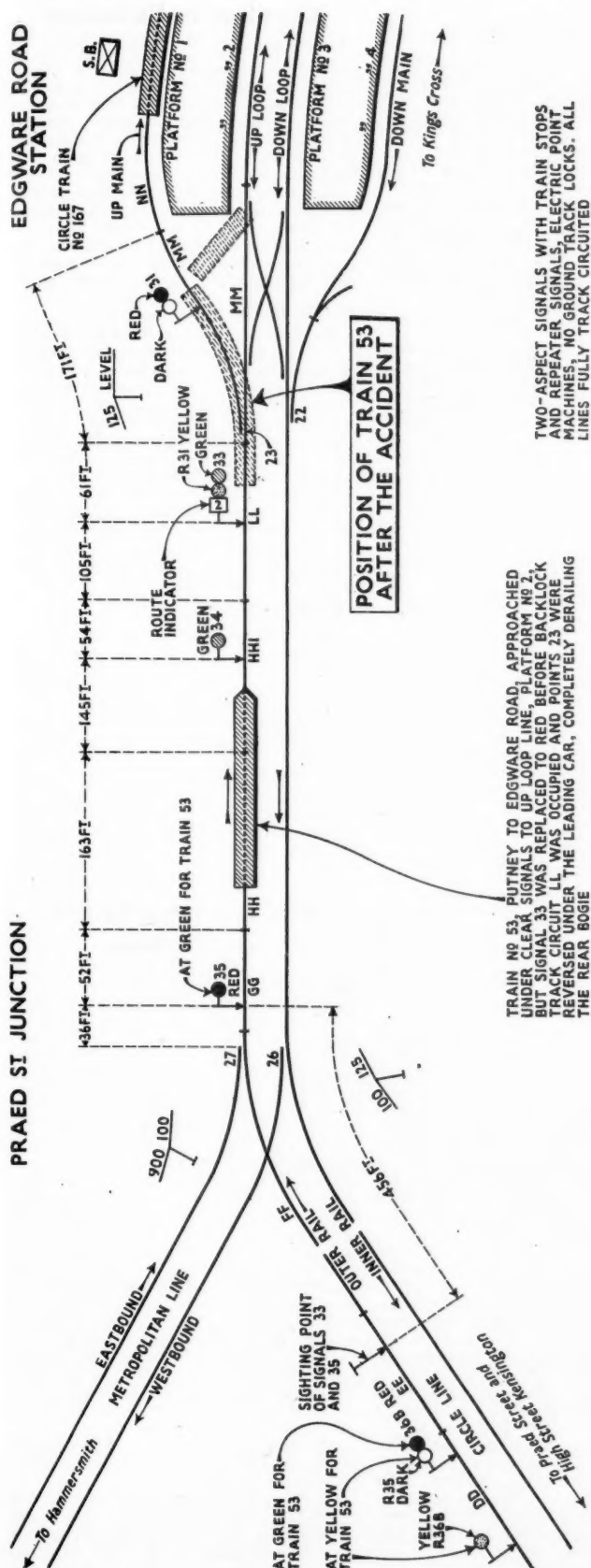


Diagram illustrating circumstances of the accident at Edgware Road, London Transport, July 1, 1950

able. If the points had moved right over just in front of the train it would have travelled to platform 1 and might have collided with Circle train 167. The overlap extends 232 ft. beyond the home signal and includes the usual 30 per cent. margin, equivalent to a speed of about 23 m.p.h. approaching the signal. In this case the train was travelling at 30 m.p.h. and for that an overlap of some 390 ft. would be needed.

As far as Edgware Road is concerned this matter is receiving attention, but consideration should also be given to the general question of the relationship between the actual speed at which trains approach signals and the length of the overlaps as now provided.

Civil Engineering Research in India

In India, as in other countries, the shortage of steel has enforced consideration of substitutes and for bridgework pre-stressed reinforced concrete has been adapted for complete spans of considerable length. As already recorded in our pages, the Government of India decided to construct both 40-ft. and 60-ft. pre-stressed spans for the Assam Rail Link.

These particular spans have proved adequate under normal traffic conditions on this metre-gauge line, but in view of the urgency with which that construction was undertaken, there had been no opportunity to test these spans under dynamic overload to ascertain the factor of safety and observe their behaviour under such loading. Moreover, it was obviously desirable to include tests of spans suitable for 5 ft. 6-in. gauge and conditions in the investigations.

Bridge Tests

Accordingly the Research Section of the Central Standards Office of the Railway Board, designers of the Assam spans, arranged for the fabrication and testing of a 40-ft. (clear) pre-stressed broad-gauge span at Kalyan on the Great Indian Peninsula Railway. The main girders of this span were identical with those already in service in Assam, but the decking was modified to carry the wider track. As the tests were made on a siding where speed running was impossible, the locomotive selected for the tests was made to slip on the span to produce the effect of impact. This locomotive was an "AWE" class with a 22.2-ton axleload, the heaviest type available, and it provided a loading on the span some 18 per cent. in excess of that contemplated in the design.

The stresses in the concrete and pre-stressing wires were recorded by electric resistance strain gauges, and the usual deflection recordings were also made under various conditions. Despite the overload conditions the span is reported to have behaved satisfactorily and shown no sign of distress.

Additional tests were carried out on this span to ascertain what damage might be sustained by the concrete in the event of a derailment on the span. An old wagon loaded to capacity was fly-shunted on to the test span and there deliberately derailed. It caused no damage to the concrete of the main girders, except where a derailed wheel passed on and close to the edge of a girder flange.

As the rails were fixed directly to the concrete in the floor structure, however, this was a particularly severe test on the members of that structure, and results made it desirable to provide normal transverse sleepers on all future spans.

Parliamentary Notes

British Railways Passenger Services

Viscount Long in the House of Lords on June 28 called attention to the statement by the Chairman of the Railway Executive on proposed curtailment of the summer passenger train services, emphasised the resultant hardship to the travelling public, and asked whether the Minister of Transport had any good news as to how the congestion on the railways was being dealt with. He went on to criticise the lack of liaison between the Ministries of Transport and Fuel & Power during the past winter, when coal shortage had caused some services to be suspended, and the discrepancy between the tone of British Railways passenger services publicity, exemplified by "Biff" and "Buff," and the realities of the situation.

The congestion on the railways, continued Lord Long, must be very great for such curtailment to be necessary. He quoted from *The Railway Gazette* issue of June 8, which read: "For a good many months the freight position of British Railways has been causing acute concern." He asked what the inter-Departmental consultative committee was doing. If the crisis was known months ago, why the publicity until the last moment of the idea that all was well?

The co-operation between rail and road, which had been so useful during the war, no longer existed, Lord Long said. He then criticised Government policy with regard to road haulage and "C" licences. As regards shortage of footplate and other staff, he deprecated the Government refusal to exempt railwaymen from national service. He suggested increasing the differential for skilled railway workers as an incentive, which would stop men leaving and encourage others to enter the railway service.

Railway Manpower Shortage

Lord Lucas of Chilworth (Parliamentary Secretary to the Ministry of Transport), in reply, said that the railways seemed to be used for party political purposes far too much. He agreed that one of the main causes of the summer services being curtailed was manpower shortage. The growing shortage of skilled railwaymen had been apparent now for nearly two years. On April 21 this year there were 1,200 drivers fewer than at the corresponding date in 1950. There were 2,984 fewer firemen—and firemen were sometimes drivers. There were 896 fewer guards and 881 fewer shunters. In January and February, 1951, there were 3,627 drivers and motormen, and 2,424 firemen, absent on sickness. In the first case that represented an increase of nearly 1,500 over the number for the corresponding period of the previous year, and in the second case 759. There were 1,861 guards sick, an increase of 540; and 1,525 shunters sick, an increase of 514. Conscription did not affect engine drivers very much, because they were the older men. In 1950, 4,102 firemen had been called up. He did not know of any inter-Departmental consultative committee.

The drift away from the railways, said Lord Lucas, was one of the penalties for full employment. One of the attractions of the railway industry before the war was that, although the wages perhaps were not comparable, there was security. Today there was security of employment in every industry. On June 19 and 20, in the hardest-hit industrial areas, they were short of 409 engine crews and 502 guards. As a result, 254 freight trains were cancelled.

By curtailing summer passenger services they had released 200-250 crews for freight train working.

The congestion, Lord Lucas continued, was mainly over, except in a few odd spots mainly in the South, where they had to build up coal stocks. This was largely due to the efforts of many workers who had voluntarily worked over weekends. Unfortunately, there was an all too large proportion who had not a proper conception of their responsibilities. If they insisted on working less for the pound they got, they could not complain if that pound gave them less. This was a joint enterprise, and first-class management alone could not solve the problem.

Coal Carrying

Dealing with the volume of traffic, Lord Lucas said that in the 16 weeks up to April 22, 1950, the net ton-mileage was 6,954,830,000; for the corresponding period this year it was 7,096,761,000, due to greater productivity, the export drive, and coal imports. Some 1,000,000 tons of coal came into the ports of this country from the U.S.A. up to the beginning of May. Of this, just over 260,000 tons went to South Wales, and of that amount 200,000 tons had to be transferred from South Wales to the Midlands. As to who was responsible, the Minister of Transport had very limited powers, and could not interfere in day-to-day management. Lord Lucas said that the Minister was not responsible for British Railways publicity. As to "Biff" and "Buff" his own commercial experience had taught him that that was not the way to get business. He went on to give details of additional passenger services, explaining that there were compensating reductions in other, lightly loaded, trains. Replying to other questions, Lord Lucas said the total remuneration of the Members of the Railway Executive, including superannuation and national insurance, came to £39,868. They were the persons most nearly comparable to the old railway directors, and did the same kind of work. It was true that they had to add a proportion of the remuneration of the B.T.C., as they would have to allocate part of the cost of the Commission to the other Executives; but the total remuneration of the Commission came to only some £23,000.

Lord Lucas stated that he was not so much concerned with the railway crisis which was just over, but about next winter. If there were to be a drift to better employment in other industries, there would be a considerable reduction in passenger services, which would be necessary if they were to avoid repetition of the freight traffic congestion they had suffered this year. They simply had not the train crews; they were not coming in—in fact they were losing them. With regard to exempting men from national service, if the Government granted exemption for one industry there would be a queue of other industries standing outside the Defence Department asking for similar treatment.

Lord Gifford asked whether anything was being done to reward railwaymen for exceptionally good work by early promotion or otherwise.

Lord Lucas said that what he had in mind when he said that there was an all too large proportion of those engaged in the National Transport system who had not faced up to their responsibilities were the silly strikes that occurred from time to time. As to Lord Gifford's point, he would think that intelligent management would always take notice of loyal and exceptional service.

Questions in Parliament

Level Crossings

Mr. Iain MacLeod (West Enfield—C.) on June 18 asked the Minister of Transport whether he was aware that level crossings around Enfield, and particularly that at Brimsdown, had a most serious effect on the production of important factories, and what action he proposed to take.

Mr. Alfred Barnes stated in a written answer: I am aware that these level crossings cause delays to road traffic and I am enquiring as to relieving conditions. To solve the problem would involve expenditure unjustifiable in present conditions.

Strawberries by Rail

Dr. Reginald Bennett (Gosport & Fareham—C.) on June 21 asked the Minister of Agriculture what representations he had received from agricultural executive committees and other bodies about the shortage of suitably equipped vans for the transport of strawberry crops, in view of the undesirability of such fruit being packed in depth in unsuitable vehicles.

Mr. Tom Williams: I have not recently received any representations of this kind but I understand that the National Farmers' Union is in consultation with the railway authorities about the requirements of growers in Hampshire.

Late Arrivals of Fish Trains

Mr. Geoffrey Lloyd (King's Norton, Birmingham—C.) on June 25 asked the Minister of Food if he was aware that, owing to delays in the morning delivery of fish to the Birmingham market by the London Midland Region, it frequently arrived too late to be sold until the following day.

Mr. Maurice Webb: My information is that delays have not been frequent, but our Regional Transport Officer will be glad to join in consultations to deal with any particular difficulty.

Staff & Labour Matters

N.U.R. Conference

The prospect of a fresh wage claim by the N.U.R. was mentioned at the N.U.R. annual conference which opened at Hastings last Monday. Mr. H. W. Franklin, President of the union, said that a new claim this year was inevitable. The wages settlement last February, which in broad terms gave an increase in wages of 7½ per cent., gave reasonable satisfaction to the great majority of railwaymen, but the constant rise in prices made it inevitable that this year a fresh wages claim would have to be considered. The union's leaders were under an obligation to see that railwaymen were "not always lagging behind in the race between prices and wages." Railwaymen must be prepared to use reasonable restraint in wage demands and when the Government found it possible to stop rising prices.

With a view to easing the financial burden on British Railways, it was revealed that in conjunction with the other railway unions inquiries are being pursued into the financial structure of the B.T.C. It is intended to submit to the Government a joint policy to lessen the burden of the £34 million a year interest charges which under the Transport Act has to be paid to former shareholders.

Mr. J. B. Figgins, General Secretary of the N.U.R., in his report, said that sooner or later the Government would have to provide assistance so that the Commis-

sion could fulfil its primary function of giving the community the best possible service at the lowest possible cost. Failure of the Government to give workers a reasonable share in management had fostered a feeling that nationalisation was the creation of a gigantic corporation, run by a special management class which did not wholeheartedly believe in nationalisation. Every worker should study the consultation machinery and use it to the full.

Order 1305

The draft of a new order to replace the Conditions of Employment & National Arbitration Orders, 1305, which has been considered by the T.U.C., the British Employers' Confederation and representatives of the nationalised industries, was approved last week by the T.U.C. general council, and the text will now be submitted to a joint drafting committee of all three of these bodies.

Speaking at the A.E.U. conference on June 29, Mr. Alfred Robens, Minister of Labour & National Service, reaffirmed that he had no intention of keeping the order in force and said it was hoped to make a statement shortly in the House of Com-

mons, and declared his desire that the collective and voluntary bargaining system should be maintained and strengthened. It is believed that the new order will seek to compel employers to recognise negotiated terms and conditions of employment.

Contracts & Tenders

A contract has recently been placed with Cravens Railway Carriage & Wagon Co. Ltd. by the Crown Agents for the Colonies for three 40 ft. inspection cars of "BP" type for the Nigerian Railway.

The Commonwealth Government Railways, Australia, have placed an order with R. Y. Pickering & Co. Ltd. for ten 10,000-gal. nominal-capacity cylindrical tank wagons.

The Crown Agents for the Colonies have recently placed the following contract for the Mauritius Government Railways:—

Hurst, Nelson & Co. Ltd.: 10 four-wheel steel covered goods wagons, for sugar traffic.

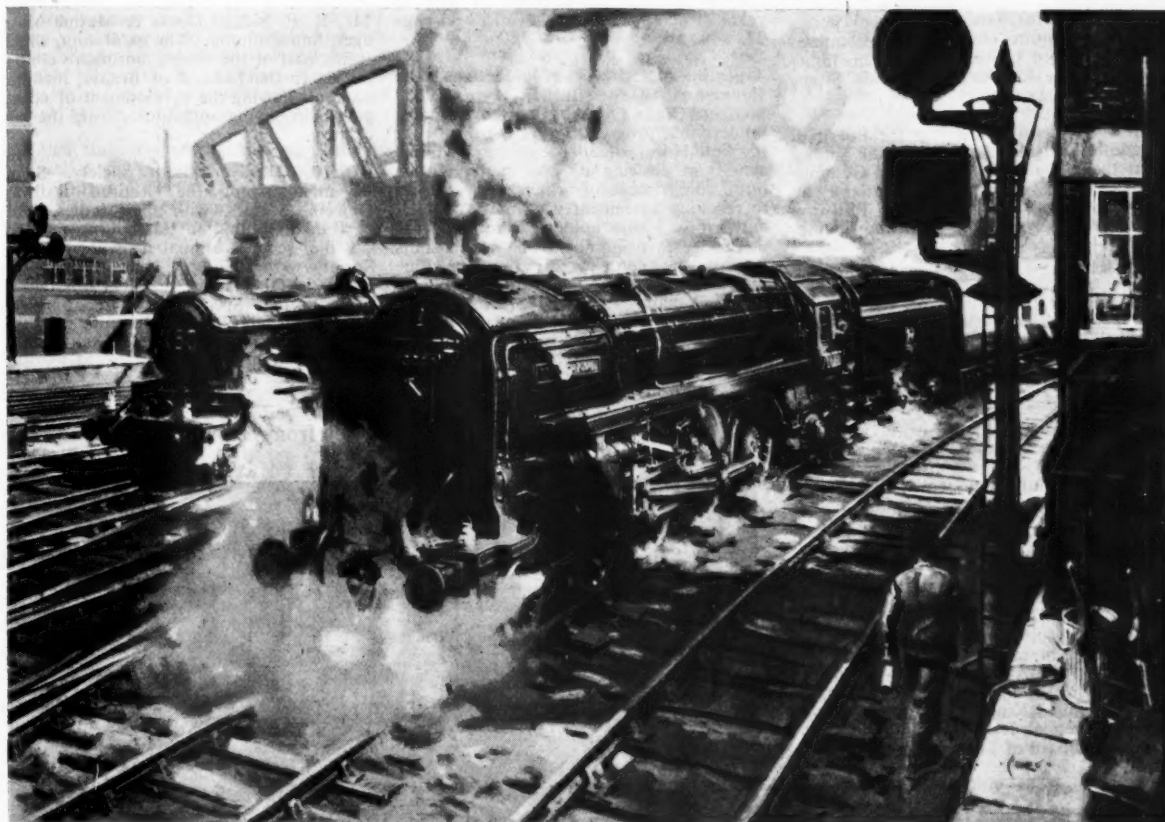
Matisa Equipment Limited has received an order from the South Australian Government Railways for a Matisa ballast-cleaning machine. In connection with this order Clayton Goodfellow & Co. Ltd. has placed a contract with Fairfield Shipbuilding & Engineering Co. Ltd. for two 5 ft. 3 in. gauge sleeper wagons, which will form the chassis of the ballast-cleaning machine.

Since the reference to the 1952-53 locomotive, carriage and wagon programme of the Indian Railway Board, which appeared in our June 29 issue, details have been received of the items which will be required. Among other items, tenders are being called for:—

Broad Gauge

Seven general-purpose electric locomotives.
22 "XA" class locomotive boilers.
Ten "XD" class locomotive boilers.
Ten "CWD" class locomotive boilers.
52 "HSM" class locomotive boilers (Bengal Nagpur Railway).
18 "DS" class locomotive boilers (Great Indian Peninsula Railway).
All-metal electric multiple-unit coaches:
88 electric motor coaches; 86 trailer coaches.

British Railways "Britannia" Class Poster



FORGING AHEAD

THE FIRST BRITISH RAILWAYS STANDARD EXPRESS LOCOMOTIVE

A new poster by Terence Cuneo, showing No. 70000, the first of the standard 4-6-2 locomotives

100 four-wheel carriage underframes with wheels and axles.
Six bogie special trucks.
Five four-wheel tank wagons.
100 bogie hopper wagons with centre discharge.
Three tower wagons.

Metre Gauge

Eight diesel-mechanical locomotives.
Four diesel shunting locomotives.
Ten "MAWD" class locomotive boilers.
All-metal electric multiple-unit coaches: Six electric motor coaches; six trailer coaches; 12 driving trailer coaches.
200 to 250 all-metal third class bogie coaches.
100 to 150 all-metal inter and third class bogie coaches.
750 bogie carriage underframes with wheels and axles.
50 four-wheel carriage underframes with wheels and axles.
1,200 four-wheel covered goods wagons.
500 bogie open goods wagons.
150 bogie rail trucks.
150 four-wheel goods brakevans.
100 bogie petrol tank wagons.

2 ft. 6 in. Gauge
30 bogie carriage underframes with wheels and axles.
20 four-wheel goods brakevans.
Ten bogie rail and timber trucks.

Quotations should reach the Chairman, Railway Board, c/o the Indian Embassy, Paris, France, not later than mid-day on August 7. The Chairman Railway Board, will be available in London between July 19 and 21 for discussions with manufacturers and for clarification of any points that may require elucidation. Enquiries from interested United Kingdom manufacturers may be addressed to the India Stores Department, London.

It was recently stated by the Board of Trade Special Register Information Service that the United Kingdom Trade Commissioner at Johannesburg has reported a call for tenders by the South African Railways for the supply of the following equipment:—

400 springs, I.R. drawgear, to drawing S3/2/7832, Item E
300 springs, I.R. drawgear, to drawing S4/4/7832, Item F
520 springs, I.R. drawgear to drawing S1/2/7832, Item A
50 washers, vulcanite 13/16 in. dia. \times $\frac{1}{4}$ in. dia. to drawing C17/2/9236 Item C.

The drawings referred to may be inspected at the office of any S.A.R. Stores Superintendent and at the office of the Chief Stores Superintendent, Rissik Street, Johannesburg. Tenderers can obtain copies on application to any of the aforementioned offices, on payment of 2s. 6d. a print. The drawings may also be inspected in the office of the High Commissioner for the Union of South Africa, London, W.C.2.

Tenders must reach the Chief Stores Superintendent before 9 a.m. on Tuesday, July 24. A copy of the tender documents is available for inspection by representatives of United Kingdom manufacturers at the Commercial Relations & Exports Department, Board of Trade, London, S.W.1.

CONVEYANCER FORK TRUCKS LIMITED.—Electro-Hydraulics Limited announce that the fork truck division of the firm, formerly known as the Conveyancer Fork Truck Company, has now been incorporated as a separate private limited company, and that as from July 1 it has been operating at Conveyancer Fork Trucks Limited, with registered office at Liverpool Road, Warrington.

Notes and News

Railway Carriage Draughtsman Required.—Applications are invited for the post of railway carriage draughtsman. Diesel rail-car experience desirable. See Official Notices on page 27.

Draughtsman for Plant Maintenance.—A firm of railway wagon and tank wagon builders in this country has a vacancy for a draughtsman for plant maintenance. See Official Notices on page 27.

Engineering Assistant for London Transport Executive.—Applications are invited by the London Transport Executive for the post of Engineering Assistant in the Development Section of the Office of the Permanent Way Engineer (Railways). See Official Notices on page 27.

Assistant Engineer Required.—There is a vacancy for an Assistant Engineer in a nationalised undertaking in the Sheffield area. Applicants should be experienced in the operation and maintenance of large fleets of road transport vehicles. See Official Notices on page 27.

Vacancy for Road Transport Foreman.—A road transport foreman is required by the Nigerian Government Railways for one tour of 18-24 months in the first instance with prospect of permanency. Candidates must be between 26 and 36 years of age. See Official Notices on page 27.

Argentine Railways Liquidation.—The liquidators of the Buenos Ayres Great Southern Railway have reported to shareholders that progress during the third year of liquidation had been "exceedingly slow" in clearing up the many matters outstanding, most of which were subject to reaching agreement with the Argentine authorities. Shareholders were told that there were a number of new claims against the company by the Argentine authorities, arising from the company's period as managers for the Argentine Government. While these claims were outstanding, said one of the two liquidators,

and while there was the prospect of further claims, the liquidators could not recommend any reduction in the balance of moneys in this country by a distribution to shareholders. The meeting approved, with four dissensions, the fixing of the liquidators' remuneration at £4,500.

Traction Motor Design Engineer Required.—A large electrical engineering firm has a vacancy for a design engineer experienced in the design of traction motors and generators. See Official Notices on page 27.

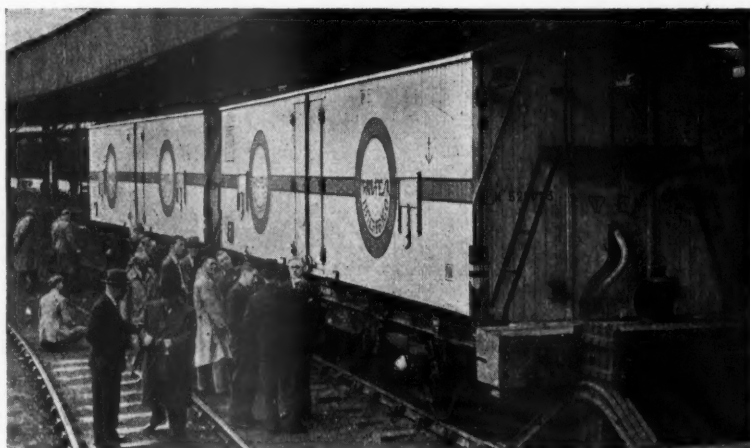
Electrical Engineering Draughtsman.—Applications are invited by a large electrical engineering firm for a draughtsman experienced in the mechanical design of traction motors and generators. See Official Notices on page 27.

First Cargo of Fresh Fruit at Sharpness Docks.—Sharpness Docks of the Docks & Inland Waterways Executive on the River Severn recently received its first cargo of fresh fruit and vegetables on the m.v. *Penon de Ifach*. This shipment included 13,500 cases of Spanish oranges.

Southampton & District Shipping & Industries Exhibition.—On June 30 the Southampton & District Shipping & Industries Exhibition was opened at the Blighmont Territorial Centre, Southampton. The chairman of the organising committee is Mr. R. P. Biddle, Docks & Marine Manager, Southampton. The exhibition, which forms part of the county borough's contribution to the Festival of Britain, includes sections showing the development of coast-guard life-saving apparatus during the last century.

Retired Railway Officers' Society.—Some 46 members of the Retired Railway Officers' Society, with their ladies, took part in an outing to Eastbourne recently on the second annual function of the Society to which ladies are invited, the first being the ladies' tea held in London in the Spring. Special accommodation was provided by the Railway Executive on the 9.45 a.m. train from Victoria and on the

Through Freight Service from Spain



Two wagons, conveying apricots from Spain, and fitted with interchangeable wheels and axles to allow operation on Spanish, French, and British lines, on arrival at Southwark Depot (see reference in our June 29 issue)

OFFICIAL NOTICES

DRAUGHTSMAN required for Plant Maintenance. Apply Managing Director, CHARLES ROBERTS & CO. LTD., Horbury Junction, nr. Wakefield.

LEADING RAILWAY CARRIAGE DRAUGHTSMAN required with general experience, especially of unit construction. Diesel Railcar experience very desirable. Apply Box 137, c/o *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

JUNIOR Traffic Officials with railway traffic apprenticeship experience. Age about 25, single, required for service on railways in Peru and Bolivia. Apply to the Secretary of THE PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

DRAUGHTSMAN experienced in steam or diesel locomotive work required by works in N.E. England. Permanent position to suitable man. Pension Scheme, etc. Apply Box 133, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

APPLICATIONS are invited by a large Electrical Engineering firm for a design engineer experienced in the Electrical design of traction motors and generators. Opportunities exist to join expanding organisation with excellent conditions of service and prospects of promotion. Applicants should give full particulars of training and experience and state salary required. Box 146, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

APPLICATIONS are invited by a large Electrical Engineering firm for a draughtsman experienced in the mechanical design of traction motors and generators. Opportunities exist to join an expanding organisation with excellent conditions of service and prospects of promotion. Applicants should give full particulars of training and experience and state salary required. Box 147, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

return journey from Eastbourne at 5.36 p.m. Arrangements for lunch and tea were made at the Sussex Hotel and a coach trip over the Downs during the afternoon was taken advantage of by many of the members.

United Railways of the Havana & Regla Warehouses Limited.—The directors of the United Railways of the Havana & Regla Warehouses Limited have informed members of the company that because of the continuance of the Cuban Government intervention in the company's undertaking, they are unable to issue their report and accounts for the period July 11, 1949, to June 30, 1950. The annual general meeting will be held at Winchester House, Old Broad Street, E.C.2, on June 25, at noon.

British Railways Coal and Steel Carriings.—During the weekend to July 2, British Railways cleared 221,320 tons of coal from deep-mined pits and open-cast sites; this made a total of 3,057,260 tons for the week. The latest figures for iron and steel show that 207,627 tons were conveyed during the week ending June 23 from the principal steelworks.

Guatemalan Railway Proposal.—It is reported that the Guatemalan Congress is considering a proposal to attach the physical property of the United States-owned International Railway of Central America, and sell it to satisfy a disputed Government claim of \$15,000,000. The President of Guatemala intervened on June 15 to delay for a second time a nation-wide railway strike. The railway management and union leaders agreed to the President's request to postpone the strike for another three days.

Sheffield Twist Drill & Steel Co. Ltd.—For the year 1950 the profit of the Sheffield Twist Drill & Steel Co. Ltd. was £491,111, compared with £398,198 for 1949, an increase of £92,913. This increased profit arose from an increase in the volume of sales and still further improved efficiency in production. After

CROWN AGENTS FOR THE COLONIES

ROAD TRANSPORT FOREMAN required by the Nigerian Government Railways for one tour of 18 to 24 months in the first instance, with prospect of permanency. Salary according to age and experience in the scale £711 rising to £860 a year (including allowances). Outfit allowance £60. Free passages for officer and wife and assistance towards cost of children's passages or their maintenance in this country. Candidates (between 26 and 36 years) must have served an appropriate apprenticeship and have had practical experience in all sections of a motor workshop with sound general experience of the maintenance and complete overhaul of petrol and diesel heavy commercial vehicles, including machine and electrical work. Apply at once by letter, stating age, full names in block letters, and full particulars of qualifications and experience, and mentioning this paper to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1. quoting M.28618.B. on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

APPLICATIONS are invited from suitably qualified persons for the Position of Assistant Engineer in a Nationalised Undertaking in the Sheffield Area. Commencing salary £700 per annum. Applicants should be fully experienced in the operation and maintenance of large fleets of road transport vehicles with a knowledge of chassis and body design, docking and running repairs and of supervising maintenance at detached Depots. Education to the standard required for Associate Membership of the Institute of Mechanical Engineers would be an advantage. Applications in duplicate should state date of birth, qualifications, experience, present post and salary, together with any other relevant information and should be submitted within seven days of the appearance of this advertisement to Box 148, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

providing for taxation, amounting to £300,115, there remained £190,906, and, taking into account the balance brought forward from the previous year of £26,369, against £18,332, £217,365 was left. Out of this amount, £100,000 is transferred to general reserve account, leaving a balance of £117,365. The dividends on the preference shares and the ordinary stock for 1950 absorb £92,583, leaving £24,782 to be carried forward.

Tube Investments Limited and Stewarts and Lloyds Limited.—The directors of Tube Investments Limited announce that the consideration payable to Stewarts and Lloyds Limited for the cancellation of the special rights attaching to the liaison shares held by the two firms has been agreed at £650,000. Shareholders shortly will be notified of the arrangements for carrying these terms into effect. This will result in the 500 liaison shares in Tube Investments Limited being converted into 500 ordinary shares as from February 14 last.

Further London Tram Replacement.—On July 11 buses will replace trams on two routes in the Greenwich and Deptford area. This is the fourth stage of the London Transport Executive conversion programme for the South London tramways. Tram route 68, Greenwich-Waterloo, will be replaced by bus route 188, from Greenwich to Chalk Farm, via Waterloo; and tram route 70, Greenwich-London Bridge, by bus route 70, from Greenwich to Waterloo Station, via London Bridge.

Scammell Lorries Limited.—The annual general meeting of Scammell Lorries Limited was held on June 21, when Mr. E. R. Cartwright, Chairman, said that the net profit, before providing for taxation, amounted to £252,786, as compared with £199,858 in the previous year. Income tax and profits tax absorbed £139,955 against £103,411, and after deducting the dividend on the preference stock, there was a balance of net profit of £109,154. This, when added to the balance of £48,150

LONDON TRANSPORT EXECUTIVE invites applications for a post of Engineering Assistant in the Development Section of the office of the Permanent Way Engineer (Railways), Lillie Bridge, S.W.6. The successful candidate will be concerned with job analysis of track maintenance and renewal operations, field tests of track components and equipment and the supervision of general drawing office work. A knowledge of permanent way work and possession of Higher National Certificate in engineering or an equivalent qualification would be an advantage. The salary range for the post is £538 to £602 per annum. The appointment is subject to a medical examination. On completion of a satisfactory probationary period, the selected applicant will be expected to join a contributory superannuation scheme. Applications, giving full details of age, training, experience and present salary should be sent within 14 days of the appearance of this advertisement to the Staff Officer (F/EV.183), LONDON TRANSPORT EXECUTIVE, 55, Broadway, Westminster, S.W.1. For acknowledgement enclose addressed envelope.

THE PERUVIAN CORPORATION LIMITED.—Assistant to Chief of Traction, Peruvian Railways; age 26/35. Qualifications: Apprenticeship with steam locomotive builders or main-line railway workshops, main experience with a locomotive running department. Knowledge of diesel power an asset. Higher National Certificate for Mechanical Engineering or graduate of Institute of Mechanical Engineers. A knowledge of Spanish an advantage. Apply to the Secretary of THE PERUVIAN CORPORATION LIMITED, 144, Leadenhall Street, London, E.C.3.

RAILWAY MAINTENANCE PROBLEMS. By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth, 84 in. by 5½ in. 82 pp. Diagrams. 5s. By post 5s. 3d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

brought forward, made a total available for distribution of £157,304. In view of these results, the directors felt justified in recommending payment of a dividend of 12/ per cent., less tax, on the ordinary stock. Export orders were well maintained during the year and development work on specialist vehicles continued.

Message to Railwaymen.—The message to British Railways Staff reproduced in the illustration below was issued last week-end on the commencement of summer passenger train services. The signatures below appear on the Western Region

BRITISH RAILWAYS.

THE SUMMER TRAIN SERVICE:
A MESSAGE TO THE STAFF.

The summer train service begins in full on 2nd July; it is a service which incorporates a number of adjustments and improvements to meet, as far as is practicable, the requirements of the travelling public. For the next two months or so, British Railways will be called upon to carry large numbers of holidaymakers, in addition to their regular travellers and to a heavy load of freight.

It is at this time that all of us should strive to present British Railways at their best. The service is a good one in the time-table, but it can only become a good one in reality if we pay attention to all those details which enable us together to offer punctual, reliable and comfortable journeys.

Many people travel by main line trains only at the holiday season, so it is important that we do all we can to ensure that the train journey is an enjoyable part of the holiday. Be helpful and courteous at all times—particularly on busy days—in your dealings with the public, our customers; be as smart in appearance as your job allows, and give a special thought to women and children, as you would to your own family. Remember, they are in "our shop"; do all you can to please them and make them happy.

We know the difficulties of the present time; you know them too, but the public may not always understand them. Let us this summer determine to triumph over them, so that the holidaymaker and all our other passengers may feel proud of what British Railways can really do.

Cartwright

Chairman—Railway Executive.

Cartwright

Chief Regional Officer,
Western Region.

edition and that of the Chief Regional Officer concerned in the edition for each of the other Regions. (This subject is referred to in an editorial note this week.)

Wagon Repairs Limited.—The directors of Wagon Repairs Limited recommend a final ordinary dividend of 10 per cent., making 20 per cent. for the twelve months, the same as in the previous year. Allowing for taxation, depreciation, and so on, there was a profit of £126,586, against £159,048, together with £52,216 from provisions made in earlier years and no longer required. General reserve will receive £90,000 and £84,861 is carried forward.

Bolivar Railway Company.—In connection with the sale of the Bolivar Railway Company to the Venezuelan Government for \$U.S.2,315,250 (about £827,000), it is now proposed that funding certificates holders shall accept full satisfaction of their claims by a distribution of 10 per cent. of the nominal amount thereof. One-half of the compensation money has been received, and the balance is due on July 18.

Driver Blamed for Pennsylvania Train Accident.—The New Jersey Board of Public Utility Commissioners reports that excessive speed caused the Pennsylvania Railroad accident at Woodbridge, New Jersey, on February 6, in which 85 persons were killed. They put the full blame on the driver, saying that he reached a speed of 60 to 65 m.p.h. instead of keeping within the specified limit of 25 m.p.h. as his train approached the temporary overbridge where the accident occurred.

Liverpool Carriage Cleaning Depot to be Modernised.—The cleaning, heating, and lighting of 150 coaches—many used on the important expresses from Liverpool Lime Street to Euston, will be easier and more efficient under a scheme of the London Midland Region for modernising and renovating the carriage cleaning depot at Downhill Sidings, Liverpool. The work, costing some £58,000, includes the installation of new equipment for vacuum-cleaning carriage upholstery, pre-heating trains, brake testing, and charging the train batteries. Facilities for watering trains will also be improved. Re-spacing of the sidings and the erection of concrete platforms and modern lighting will speed cleaning and maintenance work. Staff amenities will include a canteen for the 80 men and women cleaners. It is hoped to begin the work in the early autumn.

Thomas De La Rue & Co. Ltd. Exhibition.—When the Great Exhibition was held in Hyde Park in 1851 the firm of Thomas De La Rue & Co. Ltd. had already been established in London for more than 30 years. A hundred years ago the principal products of the company were playing cards, stationery, and so on, but their activities have extended very considerably since then. Today, for the first time since 1851, products representing all the activities of the firm have again been brought under one roof at an exhibition which opened at 28, Conduit Street, London, W.1, on July 2 and will remain open until July 19. Here may still be seen the first envelope making machine and other exhibits of 1851, while other products such as fountain pens, postage stamps, banknotes, and plastic laminates and extrusions reflect the progress made by the company in many industrial fields during the past 100 years.

Forthcoming Meetings

July 14 (Sat.).—Irish Railway Record Society, visit to the Cavan & Leitrim line of C.I.E.

Railway Stock Market

Business in stock markets has been rather more lively. British Funds provided the best section, with 3½ per cent. War Loan up to close on 87½. Transport and other nationalisation stocks all participating. Industrial shares displayed individual features of strength, but were uncertain in trend, largely because of the growing belief that, although the uptrend in profits is continuing, this is being offset in many directions by rising costs. In fact it is being pointed out that on present indications many companies outside the rearmament and export trade may have difficulty in maintaining net profits at previous levels. After the big gains shown since the Budget, however, it was only to be expected that the buying of industrial shares would become much more selective. Moreover, although helped by Korean optimism, markets have been affected by the widespread tendency to await the next turn of events in Persia. There has been a reaction in commodity shares on more talk of prospects of a big fall in commodity prices if peace hopes are realised. Commodity prices have already fallen sharply from the exceptionally high levels reached a few months back when there was a big demand owing to American stock-piling.

Foreign rails have been somewhat more active. Bolivar "C" debentures were prominent with a rise to 65 on the view that when the "pay-out" is made it may exceed recent expectations. La Guaira ordinary stock was firm at 88. Leopoldina stocks became rather more active, on renewed hopes that the Brazil will shortly pay over the £10,000,000 for the undertaking, permitting the distributions to be made on the various classes of stocks. Leopoldina ordinary has changed hands around 10½; the preference stock, however, eased to 27½, after being 27½, while the 4 per cent. debentures were better at 96½, and the 6½ per cent. debentures 141½. Leopoldina Terminal 5 per cent. debentures were 95½ and the ordinary units 1s. 1½d.

The recent reference to nationalisation by the President of Cuba tended to draw attention to United of Havana stocks, because it is contended that in any reasonable and fair scheme stockholders should receive well above current market values. On the other hand, the nationalisation plans have yet to be announced officially; and, meanwhile, the various stocks can only be

regarded speculatively. The 1906 debentures have strengthened to 17½. There was again a fair amount of activity in Antofagasta ordinary and preference stocks. The latter was again being bought, because of hopes of a further payment before long in respect of dividend arrears, assuming that the uptrend in traffics continues. The ordinary was around 10½ and the 5 per cent. preference stock 66½. In other directions Brazil Rail gold bonds were in demand and have risen sharply in price to 105s.

Manila stocks were quietly steady with the "A" debentures at 75 and the preference shares 7s. 6d. San Paulo 10s. units eased to 14s. Taltal shares were 18s. and Nitrate Rails 23s. 9d. Canadian Pacifics have been easier inclined with other dollar stocks and at the time of writing are only slightly over \$49. Nevertheless, higher dividend estimates are current in the market, based on assumptions arising from the recent raising of the interim payment. White Pass Yukon 6 per cent. debentures changed hands around 87.

There has been an easier trend in engineering and kindred shares due largely to attention drawn to shortages and rising prices of materials. On the other hand many engineering companies will benefit directly or indirectly from rearmament work; current belief is that indications are that dividends should at least be maintained.

Guest Keen were 60s. 6d. Sheepbridge Engineering at 67s. 3d. responded to the results, and Renold & Coventry Chain at 78s. 9d. were also higher on their increased dividend. T. W. Ward became firmer at 74s. in response to the higher dividend hopes. B.S.A. eased a little to 45s. 9d. The market is uncertain whether there may be any special distribution for B.S.A. shareholders from compensation for nationalisation of steel assets. The whole of this may be retained because in the event of a change of Government companies might have an offer to buy back their steel assets.

Among shares of locomotive builders and engineers, Hurst Nelson were firm at 64s. at Glasgow. Birmingham Carriage were 39s. 3d., Beyer Peacock 33s. 3d., North British Locomotive 19s., Gloucester Wagon 16s. 10½d., Vulcan Foundry 30s. 6d., Charles Roberts 109s. 6d., and Wagon Repairs 5s. shares 15s. 7½d.

Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date			
				Total this year	Inc. or dec. compared with 1949/50		Total	Increase or decrease		
							1950/51			
South & Cen. America	Antofagasta ...	811	22.6.51	£ 140,880	+	£ 79,180	25	£ 2,848,980	+	£ 1,319,230
	Costa Rica ...	281	May, 1951	c566,653	—	c467,774	47	c10,178,533	—	c694,685
	Dorada ...	70	May, 1951	35,183	—	6,442	21	177,217	—	30,174
	Inter. Ctl. Amer. ...	794	Apr., 1951	\$871,081	+	\$181,452	17	\$4,624,190	+	\$206,998
	Paraguay Cent. ...	274	22.6.51	£ 294,086	+	£ 99,687	51	£ 10,804,507	+	£ 2,917,858
	Peru Corp. ...	1,050	May, 1951	\$7,824,000	+	\$1,150,000	48	\$84,221,000	+	\$19,886,942
	" (Bolivian Section)	66	May, 1951	Bs. 17,879,000	+	Bs. 8,708,000	48	Bs. 144,382,000	+	Bs. 37,699,336
	Salvador ...	100	Apr., 1951	c166,000	+	c18,000	43	c1,729,000	+	c105,000
	Taltal ...	154	May, 1951	\$2,256,051	+	\$685,126	48	\$18,869,332	+	\$3,218,865
Canada	Canadian National†	23,473	Apr., 1951	16,818,000	+	2,159,000	17	64,458,000	+	10,909,000
	Canadian Pacific†	17,037	Apr., 1951	11,648,000	+	1,721,000	17	44,384,000	+	6,731,000
Various	Barsi Light* ...	167	Apr., 1951	50,227	+	16,440	4	50,227	+	16,440
	Egyptian Delta ...	607	10.4.51	17,513	—	267	4	17,513	—	267
	Gold Coast ...	936	Mar., 1951	288,386	+	29,182	52	3,141,271	+	333,187
	Mid. of W. Australia ...	277	Mar., 1951	41,113	+	7,335	39	357,977	+	81,623
	South Africa ...	13,347	2.6.51	1,900,284	+	323,111	9	16,912,730	+	2,986,258
	Victoria ...	4,744	Feb., 1951	1,739,845	—	87,111	35	—	—	—

* Receipts are calculated at 1s. 6d. to the rupee

† Calculated at \$3 to £1